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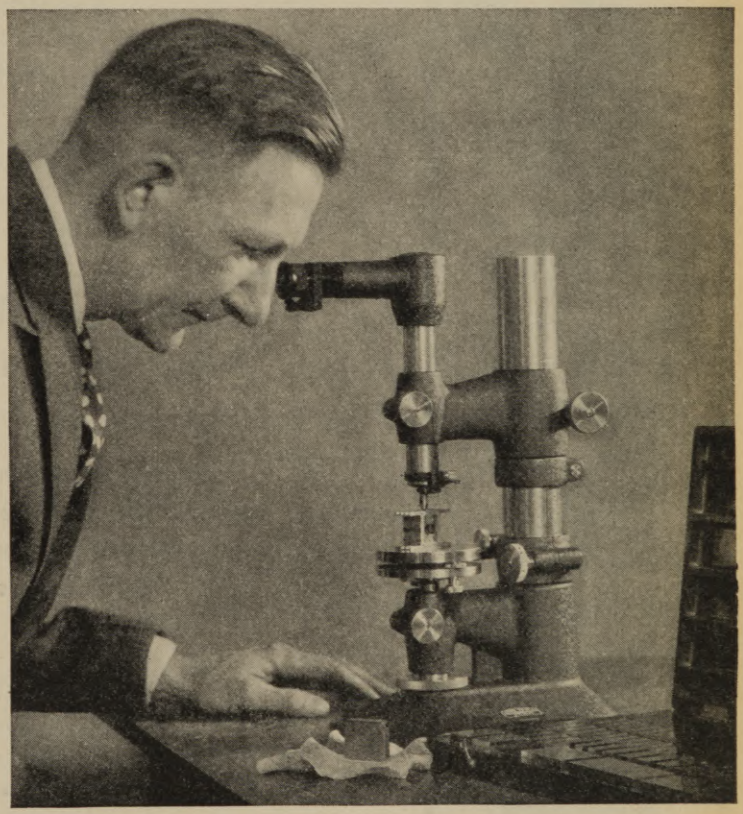
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Vol. XI

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Still by Charles Pollock

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A Ray-Bell Cameraman seeking realism.

PUTTING INDUSTRY IN THE MOVIES

Not All Motion Picture Problems Are Found in Hollywood

By R. H. Ray

President, Ray-Bell Films, Inc., St. Paul, Minn.

WHEN Universal Pictures purchased the now-famous "camera crane" which they first used in photographing "Broadway." we all gathered in our plant here in St. Paul and looked at the pictures of this crane with somewhat mingled emotions. You see, we had just finished making a picture in which we used a traveling crane, too . . but what a crane!

We were making an industrial movie in a big steel mill in South Chicago. To make working conditions a bit unusual, we had the constant din of more than one thousand riveting hammers and the clanging of innumerable steel presses. So we had to devise a sign language in order to carry on conversation most of the time. For hours after the day's work was done we would have a persistent ringing in our ears and suffered from deafness.

And then—someone suggested a few of these "motion picture angles" be put in the picture, just for "effect!"

In the industrial motion picture business we cannot say a thing cannot be done. If we did, or if we complained about conditions—well, we would not stay in the business very long. Like the newsreel men, we must get the picture, regardless of weather, lights or anything. So, we decided that a traveling crane shot from high up in the mill would give the "effect" desired.

A twenty-ton crane, used for lifting steel, was chosen and a huge bucket was hooked onto the big chain hanging down from the end of the crane. Several boards were fastened on the bucket. These made the platform for the camera and cameraman, to say nothing of the assistant who had to hang on like a human fly. A few swings of the crane to see if the operator, who was fifty-five feet away, would know just what to do. Then the Bell & Howell was chained to the platform and the cameraman and his assistant climbed aboard and away went the crane. A half minute later and the scene had been shot. Only one "take," but it was good and gave the desired "effect."

Just an example of what the industrial motion picture makers have to face in their daily work. Rather a striking contrast to the working conditions in the great studios where practically anything in the line of equipment may be had for the asking.

In large industrial plants it is frequently impossible to interrupt the work of the mill. Certain shots have to be made at certain times or you do not get them. If you do not get them you lose the job of making industrials for that firm. For example, in the same mill mentioned above we had a hard and fast shooting scedule because we had to get shots that were offered once in about every two weeks. One shot was that of the rolling of a certain type of ingot. You have to shoot fast to get steel while it is still hot enough to be pliable. No time for a director to wonder if the ingot will look better at this or that angle. And the heat was terrific. Most of the paint was scorched from our lamps, and our cables smoked from the heat. Our camera we had to incase in a galvanized iron box.

The lighting problems of the industrial picture maker are often unique, to say the least. A year or so ago while making a coal mine picture in Kentucky, we had a crew of three working for fourteen consecutive hours in a "cut" of coal where the ceiling was only 47 inches high! I wonder if you can visualize the working conditions there—the men crawling around with the light heads and stands and plugging boxes and heavy cable, unable to stand because of the low ceiling! No attempt to top light or back light there!

Frequently we are amused when someone asks us, while we are making a factory interior, if the ceiling lights will help any! We look very serious, glance up at the eight or ten 75 Watt lights and reply: "Thanks, but you may leave them off this time."

Industrial cinematographers do get some unusual shots in their pictures—shots that any cameraman might well be proud of. Men in our own organization during the past three years have photographed scenes from the following rather strange

(Continued on Page 20)



A Ray-Bell Cameramen at Work on a Glacier in the Famous Glacier National Park.

HAL MOHR, NEW HEAD OF AMERICAN SOCIETY OF CINEMATOGRAPHERS

Milner, Miller, Clarke, Arnold and Stull Chosen to Fill Important Offices

AT THE annual election of officers of the American Society of Cinematographers, held last month, Hal Mohr was chosen as President for the coming year. Other officers elected were: Victor Milner, first vice-president; Arthur Miller, second vice-president; Charles Clarke, third vice-president; William Stull, secretary, and John Arnold was re-elected to the office of treasurer.

The following Board of Governors was also elected: John Arnold, John Boyle, Dan Clark, Charles Clarke, Elmer Dyer, Al Gilks, Fred Jackman, Arthur Miller, Victor Milner, Hal Mohr, Sol Polito, John F. Seitz, Henry Sharp, William Stull and Ned Van Buren.

On the evening of April 28 these officers were installed at the annual dinner of the organization held at the Russian-American Art Club, Hollywood. Installation proceedings were conducted by the retiring president, John F. Seitz.

In the selection of Mr. Mohr to take up the reins of heading the organization, the members feel that they have made a wise choice, for Mohr not only is one of the outstanding Cinematographers of the motion picture world, but is one of the best liked men in the industry, always smiling, always aggressive, always tactful.

President Mohr has had an interesting and varied career in the motion picture industry. Away back in 1906 Mohr was producing his own stories and scripts, designing the sets, helping to build them, selecting his own casts, acting as wardrobe man, directing the picture, and photographing them as well. Then when the shaddows of evening fell Mohr would retire to his improvised laboratory where he developed his negative and made his own first prints. Outside of that he had the remainder of the day to himself.

This was in San Francisco. In that city he first started in a laboratory at the salary of six dollars a week. Then he built himself a motion picture camera and started in the newsreel game. Then he shot a picture for Sid Grauman called "The Last Night on the Barbary Coast."

But Mohr was ambitious and joined forces with some people in Frisco who wanted to make three feature pictures, even though they had only $10,000 with which to do it. Mohr helped build the studio; then made the three pictures in 14 weeks, went to New York and actually sold them all on the $10,000 budget.

"It was a tough battle," he explains, "but was a great experience." His was a one-man picture company from start to finish. And his pictures sold.

This experience was followed by Mohr becoming a film cutter at $25 a week. But he was acquiring more and more experience and finally directed two single-reelers for Harold Lloyd. Then the war came on and he joined the army.

At the close of the war Mohr came back to pictures and went to Portland, Oregon, where he was photographer, director and head cutter for a picture concern. Shortly after that he came to Hollywood and joined the ranks of "Poverty Row," where for two years he was a Cinematographer.

Eventually he landed as Mary Pickford's cameraman where he remained for a year and a half. Then he photographed "The Wedding March" and went to Warner Brothers where he shot "In Old San Francisco," "Glorious Betsy," "Heart of Maryland," "Noah's Ark" and many other big pictures.

Leaving there for Universal he gave them the spectacle, "Broadway." He followed this with "The King of Jazz," the great Paul Whiteman picture. He is under contract with Universal.

At the present time Mr. Mohr has been loaned by Universal to Warner Brothers where he is photographing Al Jolson in "Big Boy." Several other studios have been trying to borrow Mr. Mohr to start with them at the finish of the Warner picture, but Universal plans call for his return to that lot shortly.

President Mohr has an ambitious program in formulation for the coming year's A. S. C. activities. A complete outline of this program will be published in this magazine next month. Mohr, a real progressive, plans some revolutionary moves in connection with the society along educational, technical and social lines, and the members of the American Society of Cinematographers are looking forward to the year with much assurance of its being one of the most successful in the history of the organization which for years has exerted a world-wide influence.



Hal Mohr

TECHNIC OF RECORDING CONTROL FOR SOUND PICTURES

A Practical Discussion of An Important Subject

By J. P. Maxfield

This paper is reprinted from the Technical Digest of the Academy of Motion Picture Arts and Sciences. Mr. Maxfield is Supervisory Recording Engineer, Electrical Research Products, Incorporated.—The Editor.

THE purpose of acoustic control in recording is to make the sound record so correlate with the picture, that the whole performance becomes pleasing to listen to and easy to understand. It has been found that this result is obtained when the recording is so conducted that the voice, coming from the horn, appears to follow the speaker wherever he or she may go in the set, i. e. when an illusion of reality is obtained.

Before considering this matter in detail, there are one or two preliminary points to be taken up. The first has to do with the nature of the material to be covered by this paper, which is distinctly of a practical nature rather than a theoretical. Any theory which may be discussed is in the form of an explanation of why the technic operates as it does, the technic itself having been successfully used throughout several commercial productions.

The second preliminary matter is a brief review of some of the material, which has been mentioned previously from a theoretical standpoint, and which should now be discussed from the point of view of its practical use in the making of talking pictures.

Dr. Knudsen discussed the curves shown in Fig. 1. The discussion here will deal only with the one marked E (n). The vertical ordinate represents energy of speech, corresponding to the frequencies shown by the abscissa. Fortunately for those who have to operate the recording equipment, the high maximum occurring at approximately 200 cycles does not indicate maximum intensity or the maximum amplitude, which is obtained at that frequency. The data represented by the curve was obtained in such a way, that the energy shown includes not only the amplitude or the intensity which occurs at any given frequency, but also includes how often energy of that frequency occurs in speech and also how long it is sustained when it does occur. The high maximum is brought about mainly by the fundamental tones of the voice. Since the fundamental occurs in all of the vowel sounds, and since the vowel sounds are generally held longer than the other speech sounds, it is seen that a large contribution to this high maximum is brought about by the time factor rather than the intensity factor.

Dr. Knudsen also discussed the curve shown in Fig. 2, in which the ordinate shown at the right hand of the curve, represents sensation units expressed in decibels, while the abscissas represent frequency or pitch. The lower line of the curve represents the threshold of audibility, while the upper line represents the intensity at which the sound becomes physically painful. The useful range between these two curves is of the order of 100 to 120 sensation units. It would appear at first sight, that the recording system, which covers a range of approximately 40 sensation units, would be totally inadequate. However, there are some features which limit the practical use of this whole range, other than those that reside in the recording system: First, the average noise in a theatre from the ventilators, audience, etc., is seldom less than 30 sensation units above minimum audibility, and is frequently as much as 40. It is, therefore, useless to reproduce in the theatre any sounds less than 40 sensation units above minimum audibility, as they would become lost in this noise. Second, the upper 30 or more sensation units represent sound intensities of the magnitude encountered from the firing of big guns, large explosions and other uncomfortable loud sounds.

Therefore, except for the few isolated cases, where records are being made of such explosions, the practical useful ranging has been reduced by 70 sensation units, and there remains only 30 to 50 to be accommodated ordinarily. The Western Electric recording system can easily accommodate 30, and when properly maintained and operated, can accommodate 40. When it is considered that the difference in loudness, between a stage whisper and a very loud shout is about 30 sensation units, it will be seen that the limits of the system do not ordinarily handicap recording.

In the terms of the movies, Fig. 3 is a close-up of the curve shown in Fig. 2, with four additional curves added. These four curves represent the lines of constant loudness of 20, 40, 60 and 80 loudness units above minimum audibility. The top and bottom lines are identical with the top and bottom lines respectively, of curves in Fig. 2. This curve indicates that in going from loudness 20 to 40, it is necessary to increase the grain of the amplifying system 20 db for the frequencies lying in the middle region. On the other hand, in order to go from a loudness 20 to loudness 40, at the low frequencies, say around 60, it is only necessary to go 6 to 8 db. However, loudness is mainly interpreted by the middle region. If, therefore, a sound which was originally made at loudness 20 were reproduced by increasing the intensity by all its components by 20 db, it is obvious that the loudness in the bass would lie slightly above the curve representing a loudness of 60, i. e. more than 20 loudness units too high. Such reproduction would sound over-bassed or "heavy." This is one of the reasons why the human voice sounds heavy when reproduced at a level considerably higher than that at which the person actually spoke.

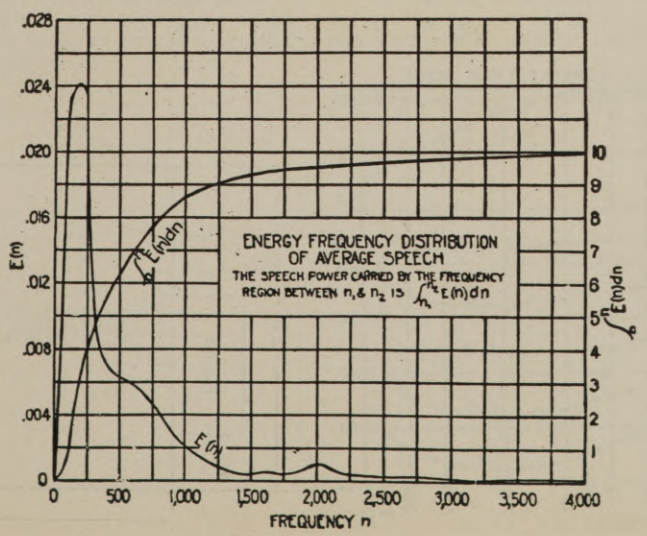


Fig. 1

This effect is inherent in the ear, and as the recording becomes more and more perfect, the loudness level, or which music or speech is reproduced, becomes more and more important. This ends the preliminary review.

The technic of acoustic control is based on letting the

camera be the eye and the microphone be the ear of an imaginary person viewing the scene. It mighe be interesting, therefore, to consider briefly how a person observes, that is how he sees and hears what is taking place around him.

When a person is viewing a real scene in real life, he is viewing it with lenses—that is, the eyes, and pickup devices — that is, the ears, which are in a fixed relationship, one to the other. This observer is equipped with two eyes and two ears. The two eyes enable him to appreciate distance or depth with much more facility than would be possible with one eye, while the two ears enable him to appreciate direction and perhaps, to a slight extent, depth where sound is concerned. The point of importance, however, is the fact that the eyes and ears maintain a fixed relationship to one another.

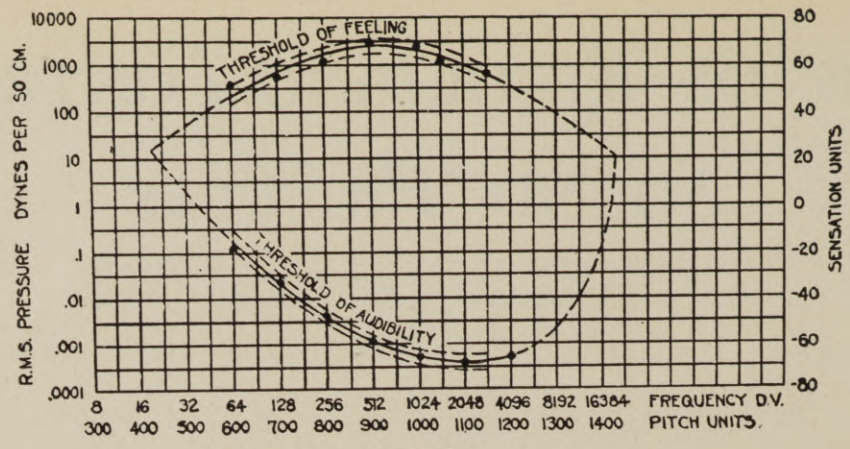


Fig. 2

The method by which direction is determined with either one or two eyes is obvious and need not be discussed. The factors which enter into the appreciation of depths or perspective of sound are the ones of interest here.

It is probable that the most important factor, particularly where monaural hearing is concerned, is that which deals with the relative change in loudness of the direct and reflected sound. Since the intensity of the reflected sound varies relatively little from place to place in a room, while the direct sound from the sources to the pickup device varies quite rapidly with its distance, the ratio of the intensity of the direct to the reflected sound also varies considerably. Hence, as a source of sound, such as a person speaking, recedes from the microphone the loudness of the voice appears to decrease slightly while the reverberation appears to increase materially. With binaural listening, this is unconsciously interpreted as distance. It has been found that this effect, when properly controlled, is also interpreted as distance with monaural listening.

In the case of the talking pictures, the camera has only one eye, or lens, and the recording system has only one ear or pickup device. Consequently those effects, which were brought about by the binocular seeing and by binaural hearing, cannot be made use of. Long experience with the photography has enabled the camerman to create a part of the depth illusion by the proper choice of the focal length of the lens used, and by the proper type of lighting. Fortunately,for the acoustic engineer, the impression of depth depends upon factors which are almost as effective with binaural listening; namely, the change in the ratio of the direct sound to the reverberation present.

The loss of direction, brought about by the use of one ear only, causes some rather unexpected results. When two ears are used, a person has the ability to consciously pay attention to sounds coming from a given direction, to the partial exclusion of sounds coming from other directions. With the loss of sense of direction, which accompanies the use of the monaural hearing, this conscious discrimination becomes much more difficult, and the incidental noises occurring in the scene, as well as any reverberation which may be present, are apparently increased to such an extent that they unduly intrude themselves on the hearer's notice. It is, therefore, necessary to hold the reverberation, including these noises down to a lower loudness than normal, if a scene recorded monaurally is to satisfactorily create the illusion of reality, when listened to binaurally.

This apparent increase in reverberation and incidental noises may easily be heard, by completely stopping up one ear and listening with the other only. It is easier to detect the effect in a room, where the incidental noises are fairly loud, and where the amount of damping is slightly less than in the normal living room.

Since it is possible to create the illusion of depth or distance in both the visual and audible parts of the talking picture, it is necessary that the amount by which the voice appears to move forward and backward in the set, should correspond with the amount the image appears to move. The amount by which the voice appears to move forward and backward in the set, depends upon the amount of reverberation present, and upon the relative distance of the microphone from the foreground and background action. In general, the more reverberation present, or the further the microphone from the source of sound, the greater is the apparent distance of the voice from the near foreground. It has also been found by experience, that if the conditions have been made correct to obtain this illusion, then the voice or sound also appears to follow the picture across the screen.

There is one important difference between the imaginary observer in the scene and the taking of a talking picture. The real observer maintains his pickup device, namely ears, at the same distance from the scene as his lenses, that is eyes. This is not necessarily the case with the talking pictures, as the cameraman may at will, use lenses of different focal lengths, whereas the observer cannot change the focal length of his eyes beyond that amount required to accommodate focus. The use of long focus lenses by the cameraman is equivalent to a means of bringing distant action into the near foreground. When such action is brought into the near foreground by the use of the closeup, it is also necessary to pull the sound up, so that it ap-

(Continued on Page 18)

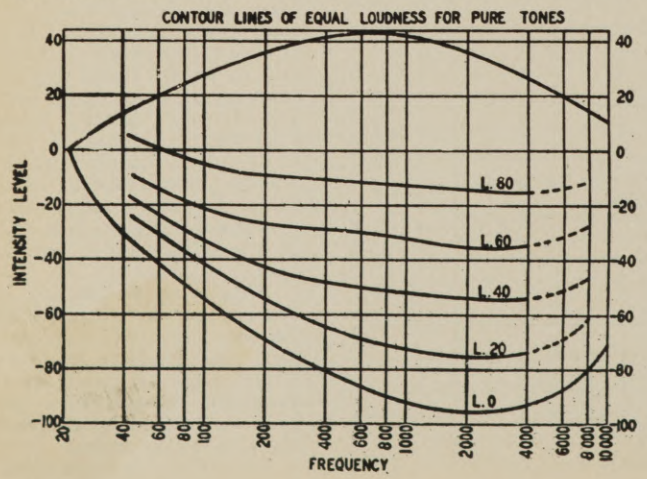


Fig. 3

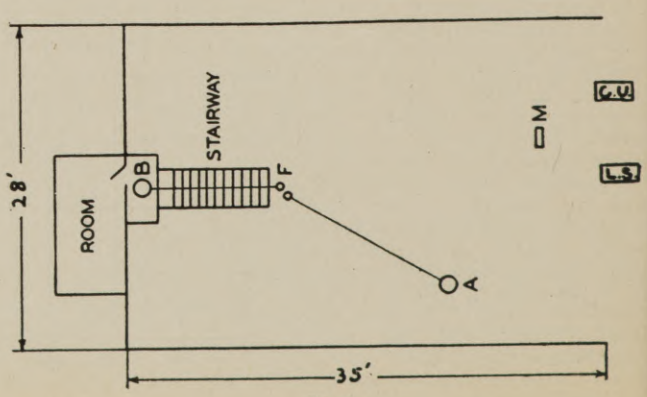


Fig. 4

VOICE TEST

Unscheduled Drama in a Monitor Room

By William Stull

THE man at the desk looked up. "'Morning, Smith. Guess you're in for another holiday today. Steinberg's still picking his cast." The telephone buzzed stridently. "Sound department—Johnston speaking Oh yes, Mr. Steinberg Where? All right, I'll send you a crew right away."

The instrument rattled back into place.

"Well, Smith, you're in luck after all. Someone's brought the Dutchman a new blonde to play his lead, and he wants a test of her right away. Going to shoot it on Stage 6—you know the Brandon company's working the night shift there, and their set-up hasn't been struck yet. No time to check the channel, but it'll be okay for a test. You'd better hurry right over, so they'll know we're on the job. I'll send the boys along after you."

As the door swung shut, Johnston turned to the man sitting opposite him. "Sorry, but when Steinberg calls, everyone on the lot has to jump. Just a moment more."

He leaned forward and spoke a few crisp orders through a dictaphone on his desk.

Then, picking up his cigar, "You sure were right when you said this is one queer game. Some of the things I've run into since I've been out here! Well, you saw that fellow who just looked in here? His story's about the strangest I've hit yet. On the payroll here his name is John Smith—but when he was my boss back East in the telephone Lab. he had another name, and could tack half the alphabet after it, if he wanted to; he was one of the real big shots in the engineering way. Had a big division of the lab. under him, and practically a free hand in running it. They said he drew down almost as much money as some of these stars out here are supposed to: at any rate, he had nothing to worry about—had a fine home, a fine job, and a wife—and what a wife! Pretty? More than that—a real beauty! I saw her once or twice when she came into the lab. to see him. Tiny little thing called Doris, she was, with a mass of fluffy, golden hair, big, blue eyes, and a figure that would give Zeigfeld a thrill! Of course he was crazy about her, and she about him. You could see that.

"Then one morning the chief came in drunk—dead drunk. Not cockeyed, but sodden, blind drunk; at least he acted that way. Plodded into his office like a machine, and plodded out a few minutes later just as though none of us were there. His secretary found a note of resignation on his desk when she went in and the chief never came back.

"Yes, he just vanished. No one seemed to know a thing about him, or where he'd gone to. Guess the police figured he'd jumped into the river, and gave it up; it was midwinter, and of course there was no hope of finding his body, if he had. Anyway, that big Walford affair came off the next day, and attracted everyone's attention.

"For my part, after the excitement in the office died down, I was too busy to think any more about it. They keep you busy in those big research plants! In due time, the wife collected the estate, and a nice fat parcel of insurance, and I didn't hear much more about her, except now and then I'd see a bit in the paper about her work in the 'Little Theatre' movement, or about her having been to some affair with Hubert Allston, who was some sort of a writer with her particular group.

"In time, I got my promotions, and when the talkie rush came, I was one of the first men they sent out here. A couple of months after I'd gotten out here, I had to go on location with one of the units down San Pedro way. During the day, who should I spot in the crowd watching us but my old chief—down and out; a regular bum! Lord! I never saw a hobo look so hungrily at a steak as he did at the sound apparatus we had! Poor devil, he'd designed most of it, and fought for it when almost everyone else in the outfit thought it was just a crazy notion. No wonder he gaped at us like a *Stella Dallas* in pants. Next to his wife, his work had always been the biggest thing in his life.

"As soon as I could get away, I got to him, and tried to make him come in with me and see some of the big guns on the lot, but he wouldn't. Talked a lot about being better off as he was, and all that, but I could see he was longing for the old work again. Well, finally I got him to come on as a mixer, under this Smith alias. Good mixers were scarce then, and there was no question of landing him a berth. Since then he's spruced up a lot, and developed into the best mixer on the lot—but he still seems sort of dazed in his mind, a good deal like my brother-in-law is, who was shell-shocked in the war. When it comes to his work, though, he's the real McCoy, all right—and, y'know, I think he's really happy up there in that stuffy little booth of his."

* * *

WHEN "Smith" reached Stage 6, he found that others had preceded him, and the deserted set was again assuming a semblance of life. A number of overall-clad electricians were checking the lights and wiring, under the watchful eye of Pete, the head "gaffer," while a small army of 'grips' were trundling another big camera booth into place beside the one in which an energetic assistant-cameraman was already setting up a camera for Dick Miller, Steinberg's inevitable photographer. Miller himself bustled over to where the head gaffer stood beside the single 'rifle' light that illuminated the set, and outlined the changes he wanted made in the lighting.

"Smith's" eyes travelled rapidly over the sound equipment. Yes, everything was about right as it stood. Might have to lower that mike on the new boom a trifle—probably not, though, unless she was extra short; it was one of the good ones. That other cable—where did that lead? Oh yes! This was Herb's set; must be that gag Herb was so fond of—hiding a special mike in some fake books on the table. Impossible notion. Sound reflected among all that junk on the table, and lost half the high frequencies before it even hit the mike—and the condenser had to be so far away that it got worse before it ever reached the amplifying panels. Silly fool notion, Herb's. It would never do anyone any good; you couldn't make a decent recording with the thing, no matter how long you tried. Never, not in a million years. Funny, there must be another mike hooked up somewhere, too. His eyes followed the slim, rubber-cased cable away from the junction-box at his feet. H'm. Off to one side, over a little set adjoining. Of course! He'd forgotten. Brandon had been working here last night. Brandon always made his pictures that way—set up a flock of cameras, hooked in all the mikes he could get, and tried to shoot a whole sequence at a time. Silly fool. No wonder his pictures were lousy. Damn these boy wonders who tried to break production records.

He turned to Dick. "How many cameras are you using for this test?" he inquired.

"Three," came the cameraman's brisk reply. "Two long-shot cameras in the big booth—one of them is for color—and my own in the little one, making close-ups with a four inch."

"All right with me. You've good motors and plenty of cable? Then I'll go on upstairs. Tell the microphone man to give me a buzz when he gets here." He turned on his heel and started toward the stair that led to the monitor room.

As he reached the door, he found himself confronted by the swart German director. Steinberg removed his inevitable, lean, brown cigar from his mobile mouth, and smiled. "So," he beamed. "That is good. I am glad you hof been here assigned. Ve must the best recording of this test hof—I s'ink I haf my leading lady at last found *Mein Gott! Sie so wünderschöne ist!* If only she records well now! But you will fix that,

(Continued on Page 26)



RANK ZUKER, A. S. C., is here shown making a scene in a picture with Louis Brock, R-K-O pictures. Frank is the gentleman at the camera. Frank says the camera shown has never been inside a booth and works within nine inches of the microphone.



Thank You!

AS TONY GAUDIO, one of the best known members of the American Society of Cinematographers, was about to leave Hollywood for a trip of several months in Italy, he was presented with a beautiful traveling bag by the members of the company and crew of "The Devil's Playground" which he had just photographed. Billie Dove is shown above making the presentation.

A. S. C. MEMBER FIRST MAN TO PHOTOGRAPH FAMOUS SHADOW BANDS

Charles G. Clarke Wins Praise of Scientific World for Accomplishing Feat First Time in History

FOR the first time in the history of the science of Astronomy scientists succeeded on April 28th in photographing the elusive "shadow bands" that accompany an eclipse of the sun.

And this feat, which has stirred scientific circles throughout the world was performed by Charles G. Clarke, a Vice-President of the American Society of Cinematographers, and prominent Hollywood Cinematographer employed at the Fox studios.

Clarke's extraordinary cinematographic feat was accomplished while he was at the Mt. Wilson Observatory Eclipse Camp, located near Honey Lake, California, under the auspices of the American Society of Cinematographers, which threw its resources at the disposal of the astronomers in their efforts.

Clarke photographed the shadow bands for a period of five minutes during the central phase of the eclipse of the sun, using specially prepared glass screen fastened on two 20-foot poles and held between the camera and the sun.

According to the Mt. Wilson astronomers, Clarke's pictures show the definite direction and curvature of the bands which the scientists say will definitely help to determine whether they originate on the surface of the moon or from the earth. This is a problem that has never been solved, although scientists have been working on it for years. Still cameras could never catch the shadow bands, but the motion picture camera did.

Daniel B. Clark, former president of the A. S. C., became interested in the eclipse shadow bands problem when he heard scientists discussing it, and immediately he took the matter up with the Board of Governors of the American Society of Cinematographers. He outlined the problem to the members of the board and pointed out the feasibility of mastering this puzzle. The A. S. C. Board of Governors immediately placed its resources behind the project and gave the word to go ahead. Dan Clark at once picked Charles G. Clarke as the logical man to make the attempt. He has photographed eclipses both here and in the Northwest and has a record as a daring aerial adventurer in the Alaskan wilds.

The preliminary tests were conducted at the physical laboratory of Mt. Wilson Observatory.

Dr. John A. Anderson, physicist, created an artificial sun eclipse, and Dr. Seth B. Nicholson, astronomer, checked its similarity to a true eclipse.

(Continued on Page 42)



Dan Clark, left, and Charles Clarke, who photographed famous shadow bands



AS THE EDITOR SEES IT



Success!

PERHAPS this wail may seem out of place in a magazine devoted to technical matters, but it is on the editorial chest and must come off.

This writer has often wondered why men when they attain a certain measure of so-called worldly success suddenly forget friends of the past; often friends who have helped them in days when the world was mighty drab and the pay check was merely something hoped for. Nowhere do you find men of this type in such profusion as in the motion picture industry. Why? That is a problem that has often been discussed. And it is not among the actors that this spirit is found. They, bless their hearts, are too lenient with their friends for their own good.

It is among the executives, directors and writers that success seems to swell the head, blot out the memory and harden the heart. The other day a man dropped into this office and told of a "former" friend of his, now a big studio executive. This man only a few years ago was plugging along in New York on starvation wages. Our friend gave him a helping hand and as a result started him directly on the path that led to his present position with a salary of four figures weekly.

But, our friend couldn't get him on the telephone, although he tried for a week. Only a chilly-voiced secretary would talk and say her employer was "in conference." So our friend went to the studio and there was told by an office boy that the executive was too busy to see him and expected to be for a month.

Typical of what success in the picture business does to so many! What a shame! After all, we wonder if they have attained success.

Again, A. S. C.!

CONGRATULATIONS are in order for Clyde De Vinna, one of the best known members of the American Society of Cinematographers. He has just been awarded the highest honor the motion picture industry can give for outstanding cinematography. Mr. De Vinna was given the award of merit of the Academy of Motion Picture Arts and Sciences for "his distinctive achievements in photographing the unique motion picture, 'White Shadows in the South Seas'." In other words, the honor of the most outstanding piece of cinematography for the period between August 1, 1928 and August 1, 1929.

Last year the award went to Charles Rosher and Karl Struss, both members of the American Society of Cinematographers.

Color

WE ARE wondering what will happen during the coming year in the development and use of color in the picture industry. For a time it seemed as though color would completely, or nearly, wipe out black and white photography.

Now, however, there seems to be a gradual change back to black and white. This is partly due to inability to get sufficient release prints in a short time. Will this stop the advance of color? After all, the prize of the Academy of Motion Picture Arts and Sciences for outstanding photography went to a picture in black and white. Time will tell.

O, Dear!

Even out here in California, where we have perpetual sunshine and glorious weather all the year, one begins to feel the breath of Spring creeping in at the well-known window these days. After all, it must be the time of year, rather than the weather that gives one that tired feeling, which can be tossed aside only by the prospect of a fishing trip. Takes one back to those old days long ago on a Pennsylvania farm where we used to cut a birch pole, use ordinary string for a line, and—B'Gosh, catch the finest speckled beauties in the world!

Those Hog Callers!

WE HAVE felt all along that someone would make us sorry that we have developed talkies. Now we know that our hunch was right; for from Washington comes the word—and from no less an authority than our good friend, Raymond Evans, Chief of the Office of Motion Pictures of the Department of Agriculture—that hog calling is soon to be recorded.

Pity the poor pigs on the farms when home talkie apparatus is installed and just as the porkers settle nicely in a deep mud puddle a persuasive "whooee" will come floating through the air in full bucolic strength, or what have you!

And, we bet a plugged nickel against a stale doughnut that after the hog calling is recorded we will hear those "husband calling" contests on the films. Probably there will be a lot of husbands rushing from the darkened theatres of the land when the resonant voice of a hubby-calling wife booms out from a news reel.

Cinematographic Annual

AT LAST, the Cinematographic Annual is on the press. And, perhaps it is best to say a few words at this time in the way of apology for being a month late in our schedule. We had hoped and expected to have the book off the press sometime in April. But when we found that we would have to leave out certain articles that we believe will be of tremendous interest and value, the board of editors thought it best to be a little late. So, you who have been waiting for it have our apology. We trust that the quality of the book will more than make up for a month's delay.

Speaking for the entire board of editors, this writer takes the opportunity to say a few words regarding this book, which we really believe will be the most outstanding publication yet to appear in connection with motion picture making, either professional or amateur, and what we say we have no fear will be contradicted when you readers see it.

We have tried to make this a book that will not only be interesting, but will be instructive as well. This, in itself, has been quite a task; in fact, a tremendous task. However, we have received the cooperation and assistance of many of the biggest figures in the technical world, and to them will be forever grateful.

As regards things purely cinematic, we turned to the men who are photographing pictures, and they have given us some articles that we feel will be of great help to the readers of the book. All the years of their experience have gone into their articles, and naturally, they are the last word in authenticity.

For sound we received the magnificent aid and cooperation of the biggest sound engineers and of the Academy of Motion Picture Arts and Sciences. The Academy, with the cooperation of the leading sound authorities of the industry conducted an excellent technical course in sound during the past winter. A large part of this course will be found in the Cinematographic Annual, through the courtesy of the officials of the Academy.

The biggest scientists of the industry cooperated in the preparation of the laboratory and theoretical articles. All in all, we believe you will find in this book just the type of publication you have been looking for.

And the amateurs, or home movie makers, will find it a veritable gold mine of information. A special section has been devoted to their needs. A special elementary course in cinematography will be found here which should make their tasks much lighter, and their 16 mm. pictures much more satisfactory. We feel that no amateur should be without this volume.

In the statistical department will be found tables and formulas that will be invaluable.

As we stated at the beginning, there will in all probability be things omitted which we would like to see, but by and large, we feel that we have a book that every person in any way connected with the industry, either in sound cinematography, theatre, laboratory, or the home movie maker will find of untold worth to them.—H. H.


LOOK WHAT THAT LUCKY HAL MOHR PANNED
WELL BY GOSH HE'LL BE A GOOD ONE AND QUICK ON THE DRAW
BOY'S THIS HAS BEEN A LONG TRIP UP HERE BUT TO GET THIS PAN FULL MAKES ME A VERY HAPPY MAN AND YOU ALL KNOW THAT BOOK IS WORTH IT'S WEIGHT IN GOLD
SAY FELLOWS DON'T FORGET THERE'S STILL ANOTHER NUGGET
THE CINEMATOGRAPHIC ANNUAL
PRESIDENCY OF THE A.S.C.
GLENN R. KERSHNER A.S.C.

Technic of Recording Control

(Continued from Page 12)

pears to be coming from a similar distance, that is from the image on the screen.

There is one other point to be kept in mind regarding the analogy between the imaginary observer and the talking picture equipment. If a speaker in the scene walks away from the imaginary observer, he walks away from both his eyes and his ears. It is, therefore, necessary to place the microphone in the same approximate direction from the action as the camera, in order that the speaker shall approach the microphone when approaching the camera and vice versa.

In view of the above, it cannot be too strongly stressed that it is important to use one microphone only for a given camera position. Naturally if the camera position changes during the scene, the microphone position should change accordingly, so that the proper relation between the ear and eye is maintained. The insistance on this requirement on one of the early pictures made, led some humorist to call this technic "The Trail of the Lonesome Mike." It should be noted from previous paragraphs; one microphone position only for one camera position. There are some cases involving complicated setups, where closeups and long shots are being attempted simultaneously, where more than one microphone may be legitimately in the set at one time, but only one of them should be on at any given time. The one that is on, naturally should correspond with the camera whose picture is to be used in the final cut. This use of closeup and long shot simultaneously, requires a knowledge of how the scene is going to be cut, and should, therefore, be avoided if there is any doubt about cutting.

During one of the first pictures that was made with this technic, the studio people were coaxed into making the sets with sufficient reverberation to produce the depth effect. The set in question was about 25 or 30 feet wide and some 35 feet long and approximately 24 feet high, as shown in Fig. 4. It represented a large hall in an old fashioned European home, and there was an entrance onto a stairway from a second story room at the back of the set. The dialogue was started in the middle foreground by a man at A, and then a young lady came out of the second story room at B, and said a few lines, the dialogue continuing until both people were at the foot of the stairs at F, midway back in the set. The studio people insisted on making a closeup and a long shot simultaneously, and as the long shot covered a considerable angle, it was impossible to get a microphone into the scene sufficiently near the young lady to take care of a sound track for her closeup at entrance. When the rushes were shown in the review room, the first to come thru was the long shot, and the result was exceedingly good, the voice appearing to come from the mouths of the speakers. The second rush showed the long shot scene with the closeup of the young lady cut in at the proper place. This picture, however, was coupled up with the only sound track available, namely, the long shot sound track. Of the five people in the review room, three unconsciously moved their heads to one side to see around the girl, in order to find out who was speaking in the room behind her. The effect was so disconcerting that it was necessary to retake the closeup with its own sound track.

Since the interpretation of distance by the microphone depends upon the acoustic properties of the set, there is only one microphone distance at which the proper sound distance will be

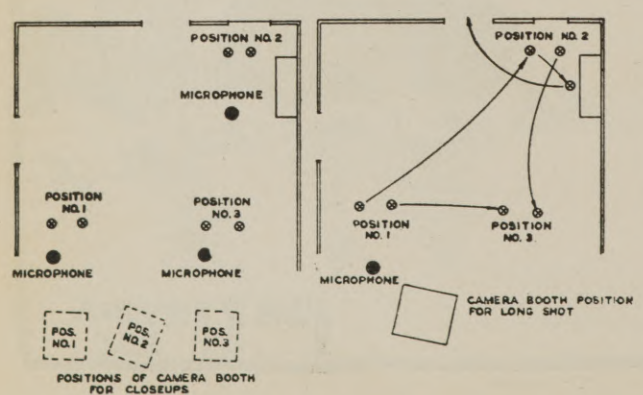


Fig. 5

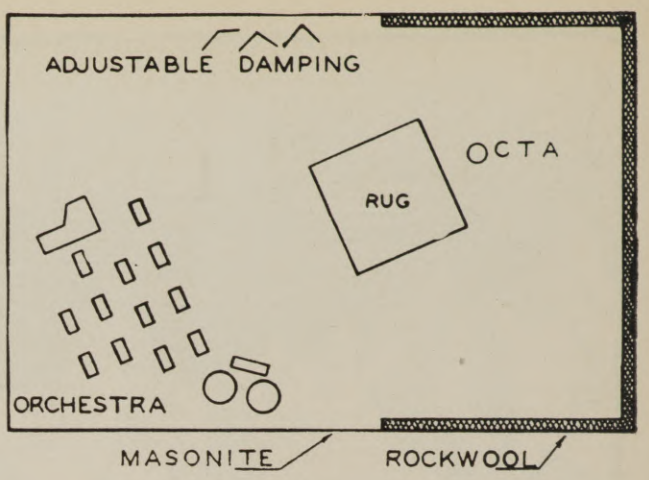


Fig. 6

obtained. This is analogous to limiting the cameraman to a single lens for his camera. Hence, when a change is made to a long focus lens, it is necessary to move the microphone nearer the scene than was necessary for the shorter focal length.

It is now time to consider how much the microphone must be moved when the lens is changed. With sets built in the manner to be described later, the microphone should be as far away from the foreground action as it would be necessary to place a 30 to 35 millimeter, in order to obtain the same sized image as will be obtained with the long focus closeup lens actually in use.

Fortunately, if the difference in focal length between two cameras used simultaneously is not too great, the ears' interpretation of the depth effect is not sufficiently accurate to cause any trouble. It is, therefore, possible to use a 35 to 40 millimeter lens simultaneously with a two inch lens without difficulty, provided the depth of action is not over 12 to 15 feet. In scenes of ordinary living rooms, no trouble would be caused by this arrangement, provided the two inch lens is not brought much closer to the subject than the shorter focus one.

Figure 5 shows two views of the same set and the same action, the right hand section indicating the situation for a long shot, while the left hand section indicates the camera and microphone positions for close-ups of each of the three dialogues. namely, those at positions 1, 2 and 3 respectively. The long shot was made with a 35 millimeter lens, whereas the close-up cameras were equipped as follows: Camera for position 1, 4", for position 2, 6" and for position 3, 4". The corresponding microphones are shown. It will be noted in the close-up section that three microphones were in use, but it should be further noted that only one was used at any one time. That, is when the dialogue was taking place in position 1, its microphone was on, and similarly for positions 2 and 3. The action occurring during the transition from positions 1 to 2 and 2 to 3, was taken care of by the long shot made under the conditions shown in the right hand section.

The next major item deals with the designs of the set, with a view to obtaining the proper conditions for the acoustic perspective. When a person listens with two ears in a real scene, he is able by his sense of direction, to pay attention to the sound coming directly from the speaker, to the partial exclusion of the reflected sound and incidental noises coming from all around him. However, with this sense of direction destroyed by the use of one ear only, he is no longer able to make this discrimination, and the reflected sounds, that is, the reverberation and incidental noises, appear to increase in intensity. It is necessary, therefore, to insure that the sets have less reverberation than would have been actually present in the real scene. It has been found by experience, that if the walls of a three walled set are built of materials having similar acoustic properties to those depicted in the real scene, that the absence of the ceiling and end wall provide sufficient damping to render the acoustics suitable for recording. This of course assumes that the sound stage is dead, or that the set is built out of doors. In practice, however, it would be both inconvenient and expensive to build the walls of a set of the materials that would really have been used had the scene been a real one. It is necessary, therefore, to use imitations. These substitutes should imitate acoustically the real

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SOUND PRINTING ATTACHMENT FOR B. & H. CONTINUOUS PRINTER

By Joseph A. Dubray

IN ORDER to fulfill the technical and commercial exigencies imposed upon the motion picture laboratories by the advent of sound pictures, it was found necessary to devise means by which the accurate and rapid printing of the sound negative could be conducted independently from that of the picture record.

The well known characteristics of sound recording and reproducing demand an extremely smooth and continuous motion of the film in front of the scanning slit, as well as a perfect control of the sources of light which impress the film upon which the sound record is registered or excite the photoelectric cell in the process of reproduction. The meticulous care with which a film sound record is made would be of no avail if the printing process of the sound negative could not be controlled with equal certainty and accuracy.

From the early inception of sound pictures, it was evident that the Bell & Howell Continuous Printer answered all the requisites of sound pictures, because through years of patient research it had reached such point of development that all the refinements most appropriate to take care of absolute film registration were incorporated in it. It remained to devise means by which the printer could rapidly and with least inconvenience to both laboratories and producers be made adaptable to the new conditions.

The Bell & Howell engineers happily solved the problem by designing a *Triple adjustment sound printing attachment* which can be adapted to all Bell & Howell printing machines in existence, and, of course, to all apparatus being manufactured.

In order to fully appreciate the problems involved and the unique manner in which they were solved, let us summarize the requirements imposed.

(1). It was desirable that existing equipment could be used.

(2). The sound attachment should preferably require only nominal alteration and fitting.

(3). Definite light control for printing the sound and picture portions independently should be insured.

(4). If possible, the attachment should permit printing either the sound or the picture area from either end of the roll, to eliminate waste time in rewinding.

(5). It was desirable that it comply with the standards approved by the Society of Motion Picture Engineers, whereby a black light shield is to be printed along the sound track to eliminate any possibility of variation of tone in sound reproduction due to a possible side motion of the film in front of the scanning slit of the projection apparatus.

(6). The device should be convenient, quickly set at any desired adjustment, positive and accurate.

(7). It was desirable to have the masks arranged so that the full negative (for silent pictures) could be printed at one adjustment.

BELL & HOWELL

CONTINUOUS PRINTER WITH TRIPLE ADJUSTMENT SOUND ATTACHMENT

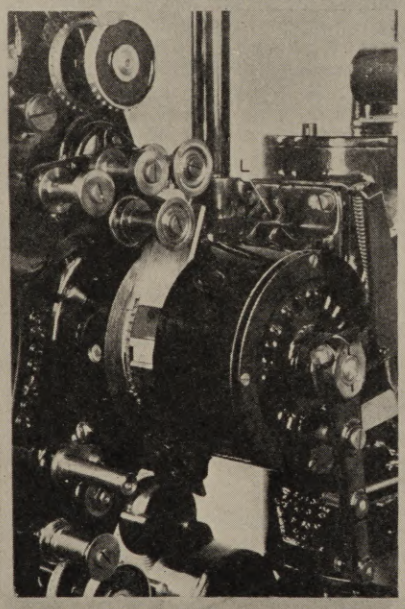


FIG. 1

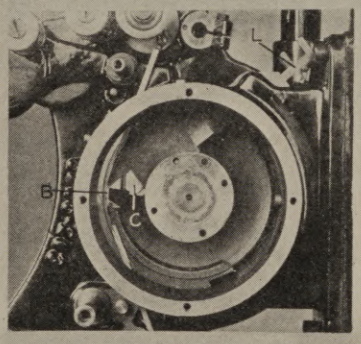


FIG. 2

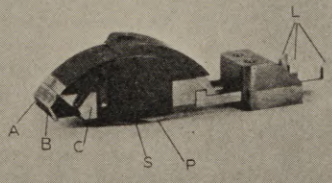


FIG. 3

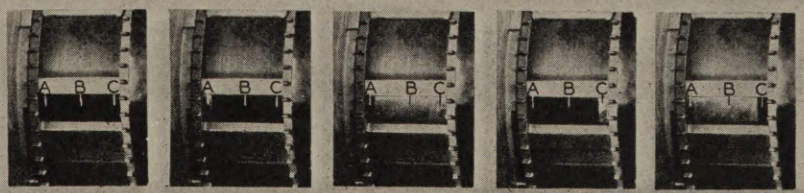


FIG. 4 FIG. 5 FIG. 6 FIG. 7 FIG. 8

'A' 'B' & 'C' - SHUTTERS MASKING SOUND AND PICTURE AREAS.
'L' - SHUTTER OPERATING LEVERS 'S' - PAWL TENSION SPRING
'P' - SHUTTER LOCK PAWL

FIG. 1 - MAJOR DETAIL OF B & H PRINTER - WITH GATE REMOVED.
FIG. 2 - THE TRIPLE ADJUSTMENT SOUND MASK ATTACHMENT - INSTALLED.
FIG. 3 - THE TRIPLE ADJUSTMENT SOUND MASK ATTACHMENT
FIG. 4 - SHUTTERS RETRACTED FOR FULL APERTURE PRINTING
FIG. 5 - SHUTTER 'A' SET FOR MASKING THE SOUND AREA - FORWARD RUN
FIG. 6 - SHUTTERS 'B' & 'C' SET FOR MASKING PICTURE AREA - FORWARD RUN
FIG. 7 - SHUTTER 'C' SET FOR MASKING THE SOUND AREA - REVERSE RUN
FIG. 8 - SHUTTERS 'A' & 'B' SET FOR MASKING PICTURE AREA - REVERSE RUN

The following description will explain clearly how very effectively the Bell & Howell Company have solved this problem, and the figure illustrating this article will clearly illustrate the workings of the attachment.

At 1 and 2 the triple adjustment sound attachment is shown installed in the standard Bell & Howell Continuous Printer. The attachment itself consists of two main assemblies —the masking unit and the operating lever unit.

The masking unit is installed in place of the usual top aperture plate. After it has been accurately adjusted in the printer, a hole is drilled through the top of the printer casting into the masking unit, and tapped. This insures the masking unit always being held in perfect alignment.

The operating lever unit is then inserted through an accurately milled slot in the printer casting so that the levers engage the masks proper. The operating unit is then fastened permanently in position.

At 2 is plainly shown the manner in which the sound attachment is arranged.

(*Cont. on Page 22*)

De Vinna Wins Academy Award For Outstanding Photography



Clyde De Vinna and trophy awarded him for outstanding cinematography

THE HIGHEST honor that can be paid an American Cinematographer has been bestowed upon Clyde De Vinna, A. S. C., for his work in photographing "White Shadows in the South Seas."

This honor consists of the award of merit of the Academy of Motion Picture Arts and Sciences. The award was based on feature pictures released in Los Angeles during the year ending July 31, 1929. The prize is a beautiful gold statuette, and was presented to Mr. De Vinna by William C. deMille. President of the Academy, at a banquet held at the Ambassador Hotel.

Mr. De Vinna has been in the motion picture field for many years and has long been recognized as one of the outstanding cinematographers of the industry. From his camera has come many unusually beautiful pictures, but when "White Shadows in the South Seas" made its appearance De Vinna was showered with praise from all parts of the world. The sheer beauty of the photography in this picture brought gasps from audiences all over the world, and when De Vinna landed in London a year ago, on his way to Africa, he was called to be the special honor guest at the London opening of the picture.

Following the completion of "White Shadows in the South Seas," De Vinna returned to the "The Pagan," another picture which excited much comment for its cinematography. He then went to Africa as chief Cinematographer on "Tader Horn." Reports from the MGM studios indicate that he has another pictorial delight in this one.

Among the other awards of merit given by the academy are the following:

To Warner Baxter, for his distinctive performance in "In Old Arizona;" Mary Pickford for her work in "Coquette;" to Frank Lloyd for his directorial work in "Weary River," "The Divine Lady" and "Drag:" Cedric Gibbons for his art direction in "The Bridge of San Luis Rey;" to Hans Kraly for writing the story of the artistic motion picture, "The Patriot." Metro-Goldwyn-Mayer Corporation was awarded first honors for the production of "The Broadway Melody."

Rumania

FOLLOWING general unemployment of musicians in Rumania, which is claimed to be caused by the advent of sound-film, the Minister of Labor has prohibited the activities of foreign musicians in the country, with the exception of those who come to work in Rumania, as members of an orchestra, of entirely foreign origin.

Putting Industry in the Movies

(Continued from Page 9)

spots: balloons, seaplanes, airplanes, the tender of a locomotive, on a speeding fire engine, on a monorail crane 75 feet in the air, on the world's largest electric shovel, on top of the framework of a bridge 175 feet in the air. I could go on until the list became tiresome.

The average two or three reel industrial production contains about eighty per cent of interiors and requires about seven working days for shooting. The crew consists usually of a director, cameraman, electrician, two to five assistants, and a man from the factory.

Often we find ourselves in difficult spots as regards light placement. Sometimes we have to take the lights all apart, carry the parts through peculiar places and put the lamps together when we get them where we want to set them up. I recall one job on which we had to do this and in order to do it had to have the plant shut down for just fifteen minutes. We had to make it fast for production cost was $1000 an hour in the plant. The great variety of subjects we are called upon to photograph makes our business an enjoyable, if at times a trying one. This week we may be up in Glacier Park working on the edge of a treacherous ice crevice where a slip of the foot would mean almost certain death. Next week the same man may be shooting some humble home in connection with a "drive" for a Community Fund. Or perhaps, he may be photographing a surgical operation in a hospital.

One of the most unusual bits of work I have ever done in the line of industrial work was the making of a two-reel production in which snakes, lizards, alligators, scorpions, turtles and birds were the principal subjects. The climax of the picture was to be a scene showing "Huckleberry Finn," a tame, four-foot rattlesnake, shedding his skin. But that was something we could not hurry. No one but the snake could do that and he wouldn't do it until the psychological time.

The snake's owner watched him day after day, waiting for the peculiar look of the snake's eyes which would just precede the start of the skin shedding operation. But that snake just wouldn't shed!

And then—at three o'clock one morning I was awakened by the ringing of the telephone. The excited snake owner was on the phone yelling that "Huckleberry" was about to shed.

"Bring him over to the studio," I answered.

So, he dashed through the early morning darkness and in twenty minutes the snake was lying on the floor beneath my camera. And the way that snake wriggled was a sight one could never forget. When the old skin had been shed, believe it or not, that snake actually looked proud!

I could go on indefinitely, but at this point thing it best to do a fadeout.

Germany

BERLIN exhibitors are up in arms against the Berlin municipality, which has entered into direct competition with them. The municipality is starting a film department "for the production and exhibition of film records of events and work in the Metropolis." The Berlin Eastern suburb of Lichtenberg has done this sort of work for a considerable time the Municipal Film Archive and Picture Theatre of Lichtenberg, located in a school house, completed its tenth year last week. Now that the Berlin Municipality is to follow this example, the Exhibitor's Association is reported to take action. During the past year the Lichtenberg authorities showed 30 feature films certified as "educationals" at prices with which no exhibitor can compete. These "educationals" included also entertainment features. The Berlin Municipality runs a Grand Opera House, concerts, lectures and other entertainments at a loss.

Warner Engineers Make 37-Pound Camera Case

A camera case weighing 37 pounds, as against the thousands of pounds of the present sound-proof camera booths, has been developed by Warner engineers. Called the "Warner Brothers Blimp," the device, which is also proof against fire and water, is to be placed on the market, with Continental Accessories Co. as the distribiutors.

Teaching by Films

Washington—A partial list compiled by the Department of Commerce, of U. S. Primary and secondary schools using films for educational purposes, shows about 300 of these institutions as already using motion pictures in teaching.

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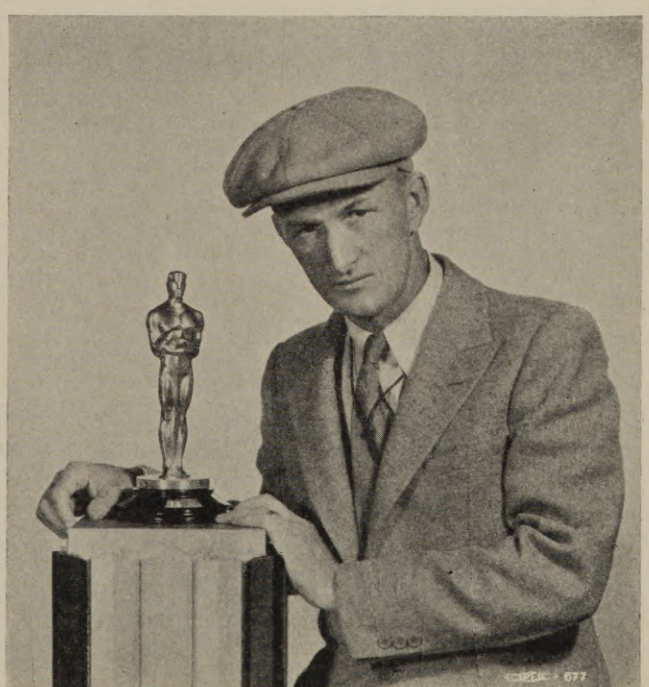
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EASTMAN FILMS

B. & H. Continuous Printer

(Continued from Page 19)

Note carefully how the masks of the sound attachment interlock with the lower aperture jaw to prevent light leakage.

In the early models of the B. & H. Printer, the printing light was controlled through the mobility of the jaws of the printing aperture. By enlarging or reducing the printing aperture more or less exposure was given the positive film for a uniform running speed of the machine.

A refinement developed a few years ago added a new method of light control called the "back shutter," which, as its name implies, consists of a variable aperture shutter located at approximately mid-distance between the printing light and the aperture. The versatility of this method of light control is so great that it permitted to dispense with the varying in width of the printing aperture itself while retaining a great range of light intensities easily controlled from the outside of the apparatus.

The "back shutter" proved invaluable in the development of the triple adjustment sound attachment, because it permitted to stabilize the printing aperture to a standard 5-16" dimension which is also the height dimension of the triple mattes.

The "back shutter" method of light control is applied to the independent printing of both the picture or the sound record, as the occasion arises.

Now let us turn for a moment to a consideration of the actual manner in which the three masks are arranged so as to control the final result in the print. At Fig. 3 is shown the complete unit so that its action can be more clearly visualized.

Three masks are employed, the width of the center one being —.750" and of the two side masks—.170" each. They are made so that they fill the 5-16" high opening. These masks are made to very close limits, as may be expected, to insure accuracy in their action, and eliminate the possibility of light leaks at their adjacent sides.

Each mask operates in accurately milled control slots in the main casting. On the under side, each mask has two slots cut, into which the pawls P (Fig. 3) engage. These pawls are held in place by the triple-tongued Spring S (Fig. 3). The slots in the masks are ½" apart, so that the stroke of the masks is ½". This withdraws the masks sufficiently far back to avoid any interference with the printing light.

Figure 2 demonstrates this more clearly than any further explanation.

The middle mask is cut away just back of the part that blocks the aperture. This recessed portion comes within 1-16" of the front and is arranged so as to avoid any possibility of fringing due to reflections from the sides of the masks. In practice, it insures the line between the picture and sound areas having sharply defined edges.

The two side mattes are milled with a slight rib on the sides adjacent to the middle mask. This rib is ⅞" from the front of the mask and protrudes .014" from its side.

When the middle mask (B Fig. 3) is pulled back, it engages this rib on the side mask and moves it over sideways. The mask is moved .017" at the aperture itself. This means that sound track does not cover as much space adjacent the picture area as it did before. Therefore, that portion of the film now uncovered (.017" wide) receives a double exposure, which results in a black line, or light shield between the picture area and the sound track.

Reference to the dimensional drawing (Fig. 9) and to Figures 4, 5, 6, 7, and 8 will show exactly what goes on. When the middle mask B (Fig. 4) is drawn back it engages the mask A (Fig. 5) and pushes it to the left. In this position the mask A (Fig. 5) covers the sound track proper and the portion of the negative marked Y (Fig. 9) is printed. However, when the sound track is to be printed the mask A (Fig. 6) is set back and the area marked X (Fig. 9) is printed. This overlapping of the two exposures produces the black line between the sound and the picture area. As stated previously, the overlapping is adjusted so that this line has a width of .017". To insure clarity in presenting this explanation of the modus operandi of the masks, it was assumed that the film was rewound between the printing of the sound and picture areas.

Now let us assume that we have printed our picture area as before with the masks set as in Fig. 5. (The negative will be in the forward running position). Then if we desire to print the sound area without rewinding, we remove both the positive and negative films from the take-up spindles and put them on the feed spindles. The printer is again threaded up and the masks set in the position shown in Fig. 8 instead of position 6.

Reference to the captions given in the figure will show how the masks are set for different conditions—it is obvious that the versatility of this sound attachment is all that can be desired. It can also be accepted that its accuracy is likewise.

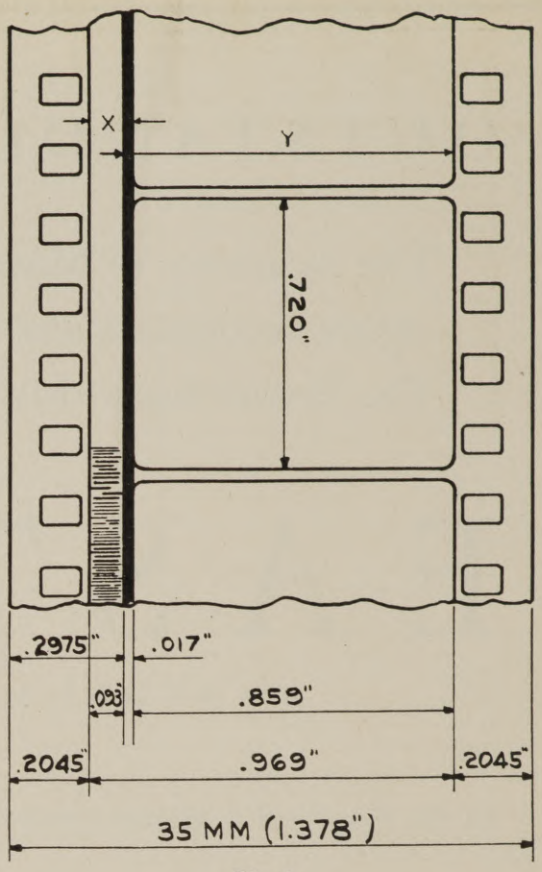


Fig. 9

Movie Congress at Algeria

DURING the festivities to be organized in spring, to commemorate the hundredth anniversary of Algeria as a French colony, an international educational film congress was held there last month. The congress comprised an exhibition of the most current types of film projection apparatus, cameras, etc.; lectures and films on public health and hygiene. The admission for exhibitors and the public, both to the exhibition hall and to the lectures, was free. The aim of the congress was to propagate the idea of motion pictures as a means of tuition.

English Tax

IT IS reported that theatres in Great Britain and Ireland contributed roughly 6,000,000 pounds last year to the Treasury in entertainments tax. The sum paid to the Treasury on this account from picture houses for the four months of last year, April to July inclusive, was 1,926,682 pounds, which was equivalent, roughly to 6,000,000 pounds a year. The fact that the picture public paid this vast sum was one more proof of the immense hold the cinema had on the British public, it was claimed.

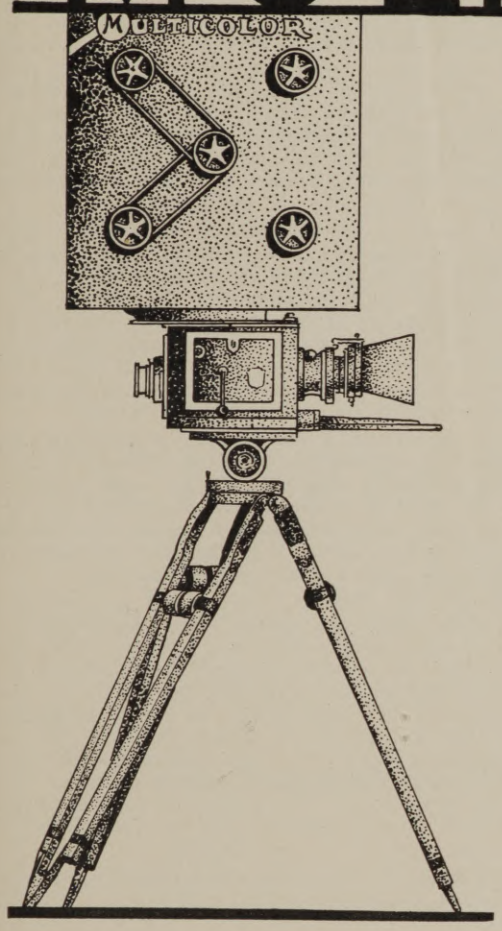
30 Minutes of Newsreel Under Experiment by Fox

Success of 30-minute newsreel shows three times daily at Fox houses in Chicago, Milwaukee and New Haven is expected to influence introduction of these programs into additional theatres of the circuit shortly. Newsreel programs are dovetailed at the noon, supper and midnight shows with three different newsreels being used.

Argentine Would Restrict U. S. Talking Pictures

Buenos Aires—Charging that U. S. talking pictures are playing havoc with the spiritual and cultural standards of the country, in addition to throwing native musicians out of work, "La Prensa" has started an earnest campaign to restrict English talkers.

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Technic of Recording Control

(Continued from Page 18)

materials as nearly as possible, and in particular should be braced sufficiently so that they do not tend to materially partake of the vibrations set up in the air by the sound.

When a set has been designed in this manner, experience has shown that the incidental noises sound more realistic and convincing, and that they may usually be recorded at the time the original scene is taken. In one picture, on which this technic was used, some dramatic scenes occurred which were to be intensified by a period of sudden silence. In order to accentuate the silence, the ticking of a clock, situated on the rear wall of the set, was to be the only sound heard. The question was immediately asked what should be used to imitate the clock. The obvious answer is the clock, since it is difficult to get any other instrument to sound more like the clock than the clock does. The scene was recorded, using the clock as the source of sound, with the microphone in the normal dialogue position for the action, and a very successful sound record resulted.

In view of the stress that has been laid on the necessity of sets having more sound reflection than those previously in use, it might be of interest to consider why some of the sets of the past have given what is commonly called a "tubby" quality. There are two ways in which a set can cause the sound to persist in it for a short time after the source has stopped. The first of these methods is by reflection of sound from the walls and floors and this method is the only one which should be active to any extent. The second method is by a diaphragm action of the walls. In this case the sound sets the walls into vibration, and they continue to vibrate for a short time, thereby causing sound after the original source has stopped. This type of "hang-over" usually has a decided frequency characteristic and is highly objectionable.

In the earlier sets, the spacing of the studding, and other supports for the set-wall material, was so great that the natural periods of the wall sections occurred in the same frequency region as the fundamental tones of the average male voice. This resulted in an accentuation of the low pitched frequencies of the voice, without a corresponding accentuation of the higher frequencies, which higher frequencies are responsible for both the crispness and articulation. To make matters still worse, where the sets were heavily draped, the damping material usually absorbed these high frequencies more efficiently than the lower ones.

With these early sets, which were designed in such a manner that they accentuated the low frequencies, and removed, by absorption, the high frequencies, it was practically impossible to record highly intelligible speech unless the speaker faced approximately toward the microphone. With the liver sets recommended, if the high frequencies, particularly those which carry the hissing sounds, fail to reach the microphone directly from the speaker's lips, they do succeed in reaching it by reflection from the walls of the set. It is, therefore, possible with these sets to record intelligible speech, where the speaker is facing directly away from the microphone position.

One interesting fact in connection with the use of the technic described is that the pictures recorded by it, are not run too loud in the theatre. This probably results from the fact that the reproduction is easily and comfortably understandable at the back of the theatre, without excessive loudness.

There is one more important point to stress. Except under very unusual conditions, the mixer dials should be set at the beginning of the take and not touched thereafter. In other words, the record should be made with the volume ranges demanded by the scene being depicted. This rule applies to more than 90% of the recording required for pictures.

Any one who has done much mixing will realize the discomfort of complying with this rule, because of the natural tendency to twist the dials. Someone has facetiously nicknamed this tendency "mixer's itch." Probably the best way to overcome it is to continue to twist the dials, but limit the amount of twisting to about 3 db. Since 3 db is scarcely noticeable to the ear, it does no damage to the overall artistic result and is therefore permissible. After the mixer has become accustomed to limiting the twisting to 3db, he can then remember that since 3 db is hardly noticeable to the ear, this amount of mixing not only does no harm, but also does no good and therefore is unnecessary. In view of the fact that most of the recording does not require mixer manipulation, it seems unfortunate that it is necessary to appear to lay any stress on the exceptions by enumerating a few. However, it is necessary from certain practical considerations to occasionally control the volume during recording. An instance of this is as follows: when two actors, playing opposite one another, have very different voice intensities, it is legitimate to have one volume setting for the weaker voiced speaker and another for the louder voiced speaker. This technic should only be used when the speakers' voices differ sufficiently, so that they would be unsuitable from the standpoint of the legitimate stage. A second example would be the case of very soft dialogue of long duration occurring within a scene. It is then advisable to raise the level of this slightly, to avoid the danger of its being interfered with by surface noise after the prints become old. Other similar situations would naturally be handled in a similar manner. This rule might be restated as: Never touch the mixer dials during a take unless there is an important artistic reason for the resulting unnaturalness.

The final matter is scoring. Scoring is normally divided into two parts, pre-scoring and post-scoring. Pre-scoring refers to the condition where the sound record is made first, and the scene photographed synchronously with the playing of this record. The acoustics of pre-scoring should be designed to fit the acoustics that would be expected in the scene which is to be depicted with the sound record, and therefore each case is a problem of its own. However, the principles governing the acoustics for this type of scoring are similar to those for sets.

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The adjustable damping shown in Fig. 7, is for two purposes: First to compensate for orchestras of different numbers of musicians, and second, to control the time of reverberation, so that it lies in the desired region as shown in Fig. 6. Approximately 4 sq. ft. of rock wool 2 inches thick is equivalent in damping, to the clothing of one musician.

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(Continued on Page 44)

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Technic of Recording Control

(Continued from Page 18)

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Voice Test

(Continued from Page 13)

Nicht Wahr? Ja, ja, it is this time a speaking test only to be. If she can not sing—pfui! There are always doubles! How soon are you ready? So soon as I am? Wunderbahr! I am ready when Mr. Westman the lady has made up Ach, here she comes now!"

"John Smith" went on up to the monitor room. It was a bare, drab little place, but he loved it. It was *his*. His domain. His temple—the inner sanctuary from which he controlled the entire mystery of the recording machinery. Three bare, plastered walls, and a fourth wholly filled with great, plate-glass bay-windows through which he could survey the entire stage. Close by, his throne and altar—an office chair and a plain table covered with the mysterious controls of the system. Here, indeed, he wielded a godlike power; here he sat in judgment over the words of those below. A twist of the wrist, and they were recorded for all time. Another twist, and they were cut off, if he chose, in mid-phrase, or the words so terribly mutilated that none might understand them. What mortal could wield a more vast, unseen power over the words, the acts—even the very lives and careers of his fellow creatures?

But enough of such romancing. The set was being lit up, the great, sound-proof doors closing; things must be about ready down there. He, too, must be prepared. He phoned the recording-room. Yes, they were ready, cameras loaded, waxes in place, all ready to turn over. He reached for the switch that controlled the power. He closed it.

Suddenly, startlingly, a voice boomed from the loudspeaker beside him: ". . . . remember, Honey, this is the one big chance for both of us. If your test is all right, you'll get the part, and you're we're *made*. If you don't—we're sunk. Remember, it's our last chance, since the market hit you so our last chance. It's your turn, now, to pull us both out of the hole just as it was mine back East, when I rid you of"

"Smith" hastily switched off the power. Herb had left the mike on that little set switched in. Yes, down there he could just see a tiny, golden-headed figure in earnest conference with a tall, shabby-looking man Must be the girl Steinberg was testing and her husband or lover. Rotten trick, going on like that just before a test Beastly thing, anyway, saddling a woman with your troubles bad enough to stand by and *let* her pull you out but to *beg* her to God! What a cad. Why couldn't he be a man shield her protect her give her what she needed what she wanted make her happy or—get out? How could a man be so low as to drag a girl like that down with his own failure How could he ?

He carefully switched out the offending microphone, then turned the power on again. He cut the main circuit in. There, that was better! Things were coming through perfectly. He could hear the director's voluble instructions to Dick Miller, the crackle of a cold lamp just turned on, the low, quiet voice of the script girl—everything as it should be. It would be a fine record. Well, he'd do all he could to help that poor child to success. He'd do his part to make up for the burden her lover imposed upon her He could do a lot, too, with such fine equipment, all at its best not like Herb's fool mike. Wouldn't do to test her with that it would ruin everything. He wondered if Herb had improved it any. Well, there was time to listen through it, and see. He threw the switch that controlled it Lord! How it changed things! He could just barely understand Dick, who was too far from the mike but when that script-girl spoke again—what a change it made in her voice! Made it all bassy and unintelligible. It would never do to use a mike like that when they were testing the poor girl. Hastily he switched back; he made a mental note—it was the third switch mustn't forget.

The phone buzzed. That would be Steinberg's assistant calling to see if all was ready. "Hello. . . . Yes, sound is all ready O. K."

The loudspeaker shrilled to the note of the head gaffer's whistle. Lights flooded the set. The babble of voices hushed. "Everybody quiet, please," shouted the assistant. "Microphone rehearsal. All right, Mr. Steinberg."

Then Steinberg's voice, soothing, coaxing. "All right, Miss Daingerfield. We're ready. Joost read those lines I gafe you yesterday to learn. Ja—you know, where you are telling your neglectful husband you must leaf him."

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Then, a woman's voice, clear, distinct, youthful. "All right. Yes, I'm going away! You have ruined my life—all these years I have given you—slaved for you—worked for you—!"

God! It was Doris. Her voice. Her test. Little Doris—Her big chance . . . her big chance.

"—But, Mr. Steinberg, I can't go on like this. I just can't *feel* these lines at all. Won't you let me use some that I can feel? Mr. Allston here wrote some for me years ago, just for such a scene. They—they *fit*. Won't you let me—please?"

She would be looking up at him, with those wide, innocent blue eyes dear eyes laughing, pleading up at him. . . .

"Ja, ja, Miss Daingerfield, ve vill giff them a try. If you t'ink you can feel them better, und they go the part with—pfui! They will do. Now try again."

"Thank you *so* much, Mr. Steinberg. It's so wonderful of you. There now—isn't this better? Allan. (faintly) Allan, I've got to talk to you now—even if you *are* busy. I I just can't stand it any more—this business—this work of yours—all the time, work *I* don't seem to mean anything to you any more. I—we—we can't go on like this. Perhaps we *did* love each other—once. Perhaps you told me you'd give up anything for my happiness—one; but what have you done since? Have you given up even a moment at your office, to prove your love for me? Have you—Oh, Allan, can't you see. . . . ?' "

Yes, at last he could . . . see. Words words. The very words she had used *that* night—every syllable, every tone and modulation the same. Just a part—lines—*words* . . . that some other man had put into her mouth. Words that he had believed to the point of giving her everything, happiness—all but life itself to squander on that thieving blackguard. Words that had broken him body and soul—that meant so little to her that she could lightly retail them for the world's amusement. And he had believed them believed *her* loved her blindly futilely—even when she trod him underfoot like a worm. That was what he was—a worm—a blind, helpless worm, who would never turn. Even now when he knew. It was too late too late to turn. *"It's your turn now, to pull us both out of the hole—"* Her turn—and he had to help her, again, as he had before, to triumph over him. . . . God! If only her voice were poor—if it only recorded badly like the script girl's through Herb's trick microphone Herb's microphone Herb's Herb's microphone was still connected! A twist of the switch—that third switch—a turn of the wrist—and the worm could turn. It was not too late! *It was not too late!*

The telephone buzzed. Rehearsal must be over. He raised the instrument to his ear.

"Hello?"

"Halloh, Vas that not goot, yes? So! Is everything for shooting ready now? Fine!"

Dimly through the loudspeaker came the clang of the gong. "Quiet! Quiet everybody—this is the picture!"

Then came another voice: "All right, give us an interlock."

His fingers worked among the instruments before him. A red light flashed in the camera booths.

"All ready. Turn 'em over!"

More commands flowed from his busy fingertips. Another light glowed in the booths. The motors on cameras and recorders began to purr.

Through the speaker came a call: "Motors up to speed! Let's go—they're sinking!"

He reached for the third switch.

The End



By WILLIAM STULL, A. S. C.

AS SPRING again comes to us, and brings summer once more into sight, many amateur cameras that were little used during the winter are being dusted off and prepared for another summer of happy filming. And as their owners look forward to their summer's activities, the prospect of individual dramatic filming is becoming more and more enticing to many of them. But some who might like to try such work hold back. Perhaps they are terrified at the apparent immensity of the task; perhaps they feel that they don't know just how to go about it: at any rate, they deny themselves a great deal of pleasure thereby.

The cinematography of the amateur dramatic production is in no way different from the sort that most experienced amateurs are already accustomed to doing: the chief difference is the fact that a dramatic film cannot be a one man show. It requires the serious, concerted efforts of several people if it is to succeed. Secondly, this concerted effort must climax careful, detailed preparation. A picture may perhaps be made without preparation, but it can not be made efficiently and successfully without it. Professional film people found that out long ago, and "shooting from the cuff" has accordingly been tabu for many years. Today more time is often spent on the preparation of a picture than on the actual camerawork, so that when the shooting commences, every move is known and arranged for in advance.

The amateur can do no better than to follow this example. Why shouldn't he be prepared, when he has quite enough technical and artistic handicaps to overcome already? Of course, in personal film work there must always be a certain amount of impromptu shooting, but in organized dramatic work, and wherever else it is at all possible, the amateur should work from a definite plan. This plan may be merely a mental outline, or it may be a detailed, written script: but a plan there should be.

In the cases where a definite, written script is possible, this script should be prepared as far in advance as is feasible, and be made as complete as possible. The script should grow out of a brief synopsis of the plot, or action. This is the scenario itself. Then, once this action has been definitely perfected and approved by all concerned, the synopsis should be enlarged to form a *shooting continuity* (commonly called a working script) This is literally a written word-blueprint of the picture as the camera will see it. It should specify every scene, giving the number of the scene, the estimated footage, the camera set-up, the angle, the action, and the type of location. Spoken titles should be included in the script, so that the actors may know what words to speak when making the corresponding scenes.

Before starting the camerawork, there are several definite lists which should be made up, as without them much confusion and loss of time and effort will result. First there is the list of the locations upon which the scenes will be filmed. The locations should be selected in advance, and listed with the scenes to be taken at each, and with the people needed at each. It is also well to note the time of day when the light is right for each scene on this schedule. Then there is the property schedule, which again enumerates the scenes, and lists the "Props" needed in each. Any inanimate object used in a scene is a Prop whether it be a Rolls-Royce or a can of fishing-worms. In some cases, certain photographic accessories might well be on this list, too. Such a list is vitally important to the chief Property Man, if his very important work is to be done efficiently.

When the picture is being photographed, it is wise to have one individual whose time is exclusively dedicated to keeping track of every detail of the action of the scenes photographed. This person is called the *Script Clerk*, and the job is far from being a lowly one, for it is highly important, and involves a tremendous amount of detail. In making a picture, scene 26, showing the hero leaving his room, may be shot today, while scene 2, showing him leaving the house, may not be photographed until a week later: if there is no lynx-eyed script-clerk to check up on him, he may leave his room in perfect morning costume, with spats, gloves, and a cane, only to leave the house—apparently ten seconds later—in flannels and a tennis-racquet. Such things are constantly watched in professional pictures, but even so, mistakes sometimes occur: Emil Jannings, for instance, once grew a very bushy head of hair apparently overnight! Even more remarkable mistakes have been known to occur in amateur films, so the script clerk is almost as important as the director or cinematographer. Besides, this detailed notation is a tremendous aid in keeping entrances and exits from becoming "crossed", and in editing and titling the film afterwards.

Each scene bears a number on the script: that number should be photographed on the film after the scene is made. In the studios this is done by holding up a slate in front of the camera while a few feet of film are ground off. This slate bears the number of the scene and "take" in moveable letters, the names of the director and the cinematographer, and the name of the picture. On the back of the slate is painted the self-explanatory legend, "N. G." If the scene is good, one side of the slate is photographed; if it isn't, the other side is used. For amateur use, in place of such slates there are a number of useful devices made, best among which are the scene-numbering notebooks made by Bell & Howell and Eastman. These will carry all the information needed, yet they fold up to pocket size. They form a valuable written memorandum of the scenes and their contents for future use, and the numbers are the only quick method of identifying the scenes in editing.

Now, do you think that the use of a prepared script will stifle inspiration and originality. Far from it; a prepared script is intended more as a guide than as an iron-clad schedule. It is to show what is needed, and how to get it in the quickest time, and to prevent one's shooting ten scenes for a spot that will only accommodate one. True originality should have mixed with it enough intelligence to be able to distinguish between a guide and a shackle. The sort of "genius" which has to shoot a hundred reels to make one perfect one has no place behind a movie camera. There—particularly in the amateur field—the goal should be efficiency: knowing what is wanted before starting, and then the ability to get it with neatness and dispatch.

However, don't be fooled into thinking that working hastily is working efficiently. The deft speed that is born of practice is far different from the slipshod speed engendered by a desire to rush a scene through. Each person has his own most efficient working-speed: learn yours, and adhere to it under every condition. It is not the impression you make on the people watching you take your picture that counts, but the impression your work makes on the film! If you would always make good pictures—dramatic or personal—first, know your camera; then, know yourself. Then, dare to be yourself—and you cannot fail.



Announcing the new B & H PHOTOMETER



(Left) View of Photometer, showing bell-shaped eyepiece.

(Right) Objective lens side of Photometer, showing filament button and exposure reading scales.

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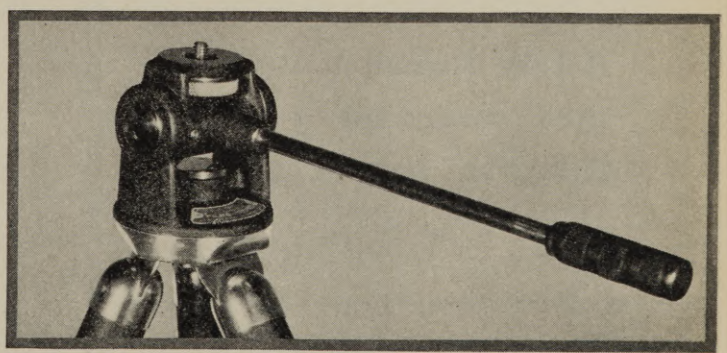
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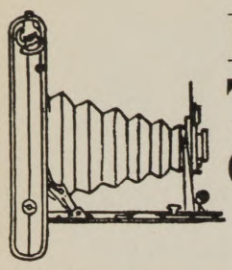
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Big Merger of Hollywood Concerns in Amateur Field

WITH 16 millimeter motion pictures developed from a toy into a world-wide industry, and with business in general tending toward consolidation, the merger of the Centaur Film Laboratories, Inc., Cine Art Productions, Inc., and the Hollywood Movie Supply Company, all of Hollywood, whose activities have pertained to the 16 millimeter motion picture industry, into Hollywood Film Enterprises, Inc., has just been consummated. This will make one of the largest organizations of its kind in existence today.

The new organization will reach out into the many branches of the 16 millimeter field and is planning many things for the future development of the industry. Simultaneous with the announcement of the consolidation is the announcement of cine Voice, "the voice of home movies," a portable home talking picture attachment Hollywood Film Enterprises, Inc., is putting on the market.

This device, which will attach to any 16 millimeter motion picture projector or any portable 35 millimeter projector, has been carefully planned and built according to the specifications of sound engineers of the professional motion picture world. It plays sound-on-disc talking pictures recorded either at the standard professional speed of 33⅓ revolutions of the turntable per minute, or at the standard phonograph speed of 78 revolutions per minute.

Along with the announcement of cineVoice also comes the announcement of the first films of a series of full reel feature talking pictures for the home recorded at the professional speed of 33⅓.

Sound recording studios are being prepared by Hollywood Film Enterprises, Inc. Under one head will be a complete production unit with every facility for the making of both sound and silent pictures for entertainment purposes, these films being released exclusively in 16 millimeter, and also for the production of industrial and advertising films. A complete production staff will devote full time to the making of these last two types of pictures in both 35 and 16 millimeter.

This merger brings into co-operation with this producing unit a distributing organization which is known throughout the world as the distributor of Cine Art 16 millimeter motion pictures for the home, and also one of the finest and most complete laboratories devoted to 16 millimeter films there is today. The laboratory is also doing developing and printing for some of the foremost motion picture producers in Hollywood. The unit which was formerly the Hollywood Movie Supply Company, will continue as a retail distributor of motion picture equipment in and around Hollywood, California.

Hollywood Film Enterprises, Inc., as well as taking over the parent companies, will continue to maintain the branch offices established by Cine Art Productions, Inc., in Chicago and New York. These offices will be direct branches of Hollywood Film Enterprises, Inc., for the marketing of Cine Art 16 millimeter films and cineVoice, and for the making of industrial pictures, both silent and sound, with a production staff available at each of these offices.

The New York office, located at 6-8 East 46th Street, will be in charge of Mr. Harry S. Millar, who has been with Cine Art Productions, Inc., for the past two years. Mr. John J. Mertz, who has been with Cine Art Productions, Inc., in Chicago during the past year, will be in charge of the Chicago office, located at 109 North Wabash Avenue.

Linguistic Difficulties

ACCORDING to American Consul Samuel T. Lee, Lisbon, Portugal, the explantions of all films in Portuguese territory must be written in idiomatic Portuguese. There are no regulations regarding sound films but since the Government is a dictatorship a single decree of the appropriate ministry will suffice. It is understood unofficially that musical portions of sound films will probably be permitted in foreign languages but not dialogue. Spanish is the only foreign language generally understood though the patrons of the best cinemas know considerable French.

A message from the Committee of the International Film Congress, in Brussels, states that according to announcements received up to now, 20 nations will be represented at the Congress next month.

NEW EXPOSURE METER INTRODUCED BY BELL AND HOWELL

Distribution of "Photometer" to Start This Month

THE Bell & Howell Company has announced another new product, which should be of tremendous interest to every user of 16 millimeter cameras. It is a new exposure meter which is called the B. & H. Photometer.

This Photometer is said by its manufacturers to "mark the greatest forward advance in exposure meters yet witnessed in the whole era of photography." Distribution is scheduled to start the first of this month.

"Movie makers everywhere," say the manufacturers, "will welcome this instrument and its elimination of guesswork in determining exposures. While experience sometimes develops a certain ability to guess the correct diaphragm setting, most amateurs are in despair when it comes to determining exposure by this 'hit and miss' method. This new, compact, Bell & Howell pocket exposure meter will make possible instantaneous readings of almost infallible accuracy. The operator can now be sure of correct exposure on every shot."

"The B. & H. Photometer is so sensitive," say the manufacturers, "that a person's face, for example, can be exposed for the particular effect desired. Dark areas and shadows can be exposed specifically—an unprecedented achievement."



B. & H. Photometer

According to the information supplied by Bell & Howell, this Photometer, a product of the new Bell & Howell Engineering Development Division, is of an entirely new type. It is based upon a simple laboratory method of light intensity measurement. The light intensity, or brightness, of a small surface, in the instrument, furnished by the incandescent filament of a small electric light bulb, is made to match the brightness of the surface or subject to be measured. The brightness of the filament is varied or controlled by the simple operation of turning a dial. The direct comparison of the brightness of the filament with the brightness of the subject, as viewed through the eyepiece of the Photometer, permits a quick and direct reading, taken from the dial, of the lens diaphragm opening to be used for the subject being photographed.

"This new method," continues the announcement, "is unique in that it permits finding the exposure while actually seeing the subject. This makes it possible to determine the exposure required to register shadow or dark details, or highlight or light area details, or to strike an average exposure

(Continued on Page 44)



New B. & H. Photometer in Actual Operation.

ON WITH THE DANCE

Larry Ceballos Teaches How to Dance by Means of Screen

By Hal Hall

TEACHING prospective screen dancers how to dance for the screen by means of the screen is the unusual method which is being employed by Larry Ceballos, who is in complete charge of all the dancing and dancers for Warner Brothers and First National Studios in Hollywood.

The Ceballos system was conceived one day when Ceballos was at a friend's house and saw a 16 mm. picture in slow motion of a golfer showing the correct and incorrect manner of whacking the little white golf ball over the greensward. That gave Ceballos an idea which he immediately tried out with untold success.

"At the start," explains Ceballos, "it was quite a difficult task to get our dancers to do their stuff in just the proper manner for the screen. And then came this idea. Now it is easy. For there is nothing that shows one their defects quite so well as on the screen.

"You see, I get some new dancers in. I show them just what the steps are for the particular number we are going to use in the screen play. They rehearse and we photograph them when they think they are beginning to get good. Then we take the dancers to the projection room and let them see themselves. That is enough. Those who are good can see it. Those who are not can also see it. No need for lecturing then. They see for themselves and there is no argument.

"That is where the screen dancer has the advantage over the stage dancer today. On the stage the girls cannot tell how they look. They just do the best they can, and have to let it go at that. But here our dancers can take a look at themselves and see how they are going to look to others. A decided advantage.

"Then, too, this method gives us the opportunity to see just whether or not the dance will appear to advantage on the screen. We might think a certain dance is wonderful when we are looking at it with the girls or boys actually before us. But on the screen the rhythm may be all wrong. It may not register at all. With sound, the complications set in, especially if there is acrobatic or tap dancing. So we can find out at slight expense if a number is going to go over on the screen or not."

Ceballos, whose whole career has been devoted to the dance art, believes that dancing will have a big influence on the screen; that it will even bring about an entirely new type of picture some time in the future, just as it has had its effect on the stage.

"Not until the sound pictures came," says Ceballos, "did the dance have very much to do with pictures. That was probably because of two reasons. Before sound the musical show type of picture did not mean so much, and also the sound of the dancers' feet has a certain fascination that is irresistible. In the old days of the silent screen one always had a peculiar idea that perhaps the dancers were really not dancing when you saw them float about with no sound. Now it is different, and the dancing is becoming a big factor in pictures.

"A musical comedy is not a musical comedy unless there is dancing. The more dancing the better the show as a rule. But I feel that we are going to have more than musical comedies with dancing. I feel certain that the future is going to see the dance playing a big part in pictures. It must. The dance is one of the very oldest of the entertainments, and it has its direct appeal to everyone. There is a certain grace and rhythm about dancing that appeals. It makes one forget the sordidness of this old world for a time, and wafts you away into a land of enchantment where cares are forgotten and brings beautiful thoughts into troubled brains.

"I can see in the future big pictures founded solely on the dance. The tempo of the picture will be governed by the dancing, and it will be a tremendous box office success.

"Dancing has an excellent influence on the screen. Thou-



Larry Ceballos' girls at First National do not mind the snow.



Ceballos in action putting First National Chorus through its paces in preparation for a picture

sands now see the best in dancing as compared to hundreds in the past. The result cannot help but be for the good of the whole. Peoples of the world are influenced in their choice of clothing, furnishings, homes—practically everything—by the motion picture. And so it will be with the dance. Few of us can sing, for we do not have the voices. But most everyone can dance and the dances of the screen will influence the dancing of the screen patrons. It is inevitable. For that reason we cannot be too careful about our dances. They must be of the very finest and the best. We must watch carefully to keep out the suggestive and the immoral. That must not be. In the future I look for the new dance steps to come from the screen.

"And while on the subject of the screen's contributing to life in general, let me say that the time is coming, in my opinion, when the stage will begin to draw its plays and musical shows from the screen. For years the screen has been taking stage plays and making them into pictures. The tables are going to be turned in the future. The greatest minds are being employed by the picture companies. It stands to reason that eventually the stage is going to be buying screen plays for stage presentation."

Ceballos has approximately a half hundred dancers on his regular staff at the studio. These are kept in vigorous training daily. There is no let down at all. When they are not rehearsing for a picture or playing in a picture the dancers are working out new steps and dances for future productions. His dance studio is one of the busiest spots on the studio lot.

Motion Picture Film Visualizes Mining, Distribution and Utilization of Sulphur

THE mining, distribution and uses of sulphur, a mineral of great economic importance, are visualized in a new two-reel educational motion picture film just completed by the United States Bureau of Mines, Department of Commerce, in co-operation with a large producing company.

The United States produced about 2,000,000 tons of sulphur in 1929, or more than 80 per cent of the world total, a carload of sulphur being produced in this country every ten minutes, it is pointed out in the film.

The early scenes show a typical sulphur mining town near the Gulf of Mexico in Texas, where most of the domestic sulphur is mined. The highly ingenious process by which sulphur is mined, by melting it underground with heat supplied by superheated water, and then forcing the liquid sulphur to the surface by compressed air, is next illustrated. Views are given of the huge boilers for the generation of steam used for water heating and power and of the great reservoirs necessary for the insurance of adequate supplies of water. The treatment plant in which scale-forming minerals are removed from the water before it enters the boilers and heaters is also shown.

Wells are drilled down through various formations of the sulphur-bearing strata, and are equipped with concentric pipes which carry down the heated water and compressed air and bringing up the liquid sulphur. A series of views picturizes the drilling of the wells, in which ordinary oil well drilling equipment is used. A diagrammatic sketch of a cross section of a sulphur dome indicates the various strata of sand, clay, gumbo, limestone, calcite, and gypsum encountered in the drilling of a well. By the use of animated photography, every step in the process of the melting of the sulphur at a depth of 1,000 feet and the forcing of the liquid sulphur to the surface by compressed air is made plain.

A series of scenes demonstrates how the liquid sulphur from the wells is piped to relay stations, then pumped to a main pumping station and elevated to the top of huge storage vats, where it cools and solidifies. The sides of these vats are built up to a height of 40 to 50 feet in sections, as needed, to hold molten sulphur in process of solidifying. Each vat contains more than 1,000,000 tons of sulphur.

When a vat has reached the desired height the sides are removed and the sulphur is blasted for loading in shipment. A series of interesting scenes depicts the drilling of blast holes in the top of the huge vat, the firing of the blast, and the loading of the sulphur into railway cars. Four thousand pounds of sulphur are picked up at a time in the buckets of the powerful hoisting machines used.

The loading of the sulphur in ships at a Gulf port is next depicted. A big belt conveyer is used to put the sulphur aboard the boat, and the sulphur is weighed on the belt at the top of the incline. In 1929, nearly 800,000 tons of sulphur were exported and more than a million tons were shipped to United States points, it is explained.

Animated photography is again resorted to in demonstrating that a pile of 1,000,000 tons of sulphur, equal to the contents of one of the huge storage vats, is larger than the Capitol at Washington, D. C.

The numerous important uses of sulphur are demonstrated also by the use of animated photography, a cube supposed to represent 1,000,000 tons of the material being chipped off into sections representing the amounts used for this purpose. Of

(*Continued on Page 39*)



Do not guess

Always use a

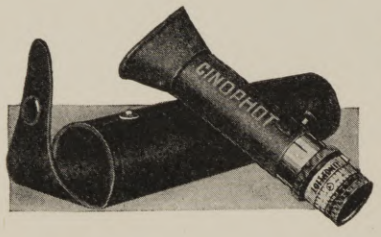
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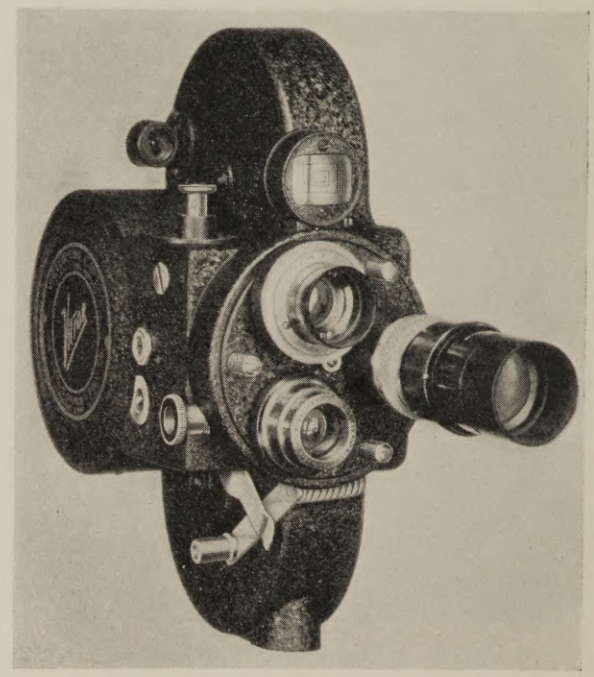
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New Amateur Camera With Visual Focusing Finder



THE Victor Animatograph Company of Davenport, Iowa, has just made an announcement that should be of great interest to all home movie makers. It is a new 16 mm. Cine Camera *permitting direct visual focusing*. This is the first instrument of its kind to be equipped with a visual forcus finder, and marks a decided forward step in the 16mm. field. This camera is called the Model 5 Victor Cine Camera.

The lens to be used is turned to the finder position, and by actually observing an image which exactly corresponds, as to size and focus with the one that will be exposed, each scene may be individually focused, without paying any attention at all to the focusing ring on the lens, except moving it, of course, to produce the sharpest possible focus.

This focusing feature makes more practical than ever, the use of the very fast lenses, particularly the F. O. 99 Dallmeyer and any of the other lenses of exceptionally large opening.

Also, it makes possible the accurate focusing of very close-up objects, even to within a few inches of the camera. This finder is in such position that it can be readily used on a tripod with the camera at eye level as well as when the camera is held in the hand. The focusing finder is very accurate. It registers exactly the same as the aperture. When the image has been focused, a one third turn of the turret brings the lens to operating position.

Another feature of the MODEL 5 VICTOR CAMERA is that every essential operating speed is provided—8 frames per second (half normal)—16 frames per second, (normal)—24 frames per second, for making better pictures of rapidly moving objects,—32 frames per second—and for SLOW-motion, 72 frames per second, or 4½ times normal. The operating button gives these additional speeds at a slight turn, and a lock-down operating position is provided for 8, 16, and 24 frames per second. A non-operating lock position is also provided.

The turret front is provided with three convenient knobs, for revolving the turret, without touching the lenses. All parts formerly nickeled are polished chrome plated and a number of minor mechanical refinements have been adopted.

According to an article by Prof. Sucharodsk in "Berlin Am Morgen" (Berlin, Germany), it will shortly be possible to give cinematographic lessons in the 150,000 schools in Russia, which are being equipped for projection.



Bell & Howell's New Tripod

THE new Filmo All-Metal Tripod, which is announced for May 1, was developed to meet every requirement of the personal movie-maker. Telephoto as well as short shots can be made without risk of jerkiness on the film and the consequent lessening of the effectiveness of the projected pictures. The new tripod is a Bell & Howell designed instrument, a product of this company's new engineering laboratories. It has a standard tripod socket and hence can be used with any camera.

The construction of this tripod is a radical departure from that of the usual light portable tripod for the amateur or semi-professional. It is remarkable for its rigidity, for its light weight and compactness, as well as for its unusually versatile performance and its convenience in use.

It is provided with adjustable extension legs, with simple means of locking into position. Its swivel-head provides for every desired angle and camera movement. This head is an integral part of the legs and is dust-proof.

An automatic tilting counter-balance is a distinctive feature of this tripod. The counterbalance prevents the camera from pulling forward and tripping the tripod over. It also makes for smoother tilting, since it relieves the operator of much of the camera's weight. The counterbalance spring in the center of the tilting spindle is of the correct strength to provide balance for the Filmo 70 camera at any angle, and is also very helpful when using a lighter or heavier instrument, either motion picture or still camera.

The tripod pams with ease and extreme evenness. A constant and even application of balanced friction prevents jerkiness on one hand and too great freedom on the other. The result is an extraordinarily smooth pam which is greatly enjoyed on the screen. It is this unique principle of applying balanced friction that has hitherto been so difficult to work out.

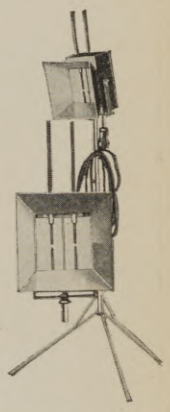
Three Screen Companies Are Joined in Merger

With the acquisition by the Motion Picture Screen Corp. of the manufacturing plant, assets, patents, processes, name and good-will of the Truvision Projection Screen Corp., now bankrupt, three screen companies are brought together under one management. The other concern is the Beaded Screen Corp., with which the M. P. Screen has become affiliated.

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Len Roos, A.S.C., Settles Down as Manufacturer



Len Roos in the old days when he was a wanderer

MOST wanderers usually settle down after a certain number of years. The reasons for such cessation of globe-trotting are many and varied, but in the case of Len Roos, well known member of the American Society of Cinematographers, the reason is one of the most unusual this writer has hit upon.

Len for years wandered all over the face of the globe with his camera, making news reel pictures, independent pictures and pictures in strange lands for various big companies. You never know just where Len was going to bob up with his camera. China, India, Borneo, Siam, Africa, South America—he was everywhere.

But a few months ago he landed back in Hollywood. No one expected to see him here for more than six or eight weeks. However, he is still here, and present indications are that he will probably be here from now on.

The reason for Len's arrival in Hollywood was to find some sort of sound equipment that would be really portable and could be carried around by a traveling cameraman and used in any part of the world without the necessity of taking an engineer and a force of helpers along. Len didn't find what he wanted, so he started creating such a device himself. The result is the Tanar Corporation, Ltd., an organization manufacturing portable sound equipment that can be carried by a cameraman and his one assistant; an equipment that can be placed in two grips and carted by hand, horse-back, mule-back or wheelbarrow, and which can be set up for use in a few minutes anywhere.

Len's idea at first was to build something like that for himself, but he saw the possibilities in it and soon a company was formed and now Len has just about forgotten the business of being a cameraman for that of managing a manufacturing concern.

"I have an itching heel every now and then," says Len, "and I feel that some day I shall just pack up my camera and make one more trip. But with business as rushing as it is now and with orders piling in on me, I don't see when that day will come. There are so many other men who are clamoring for real portable equipment that I simply can't fail them. So I guess that last trip will have to wait for a while."

So that's that. The wanderer has quit wandering.

Sound-on-Film Device Developed by Pacent

A NEW all-frequency method of sound-on-film recording, said to combine the best features of both variable area and variable density recordings now in use, has been developed by Pacent, it is announced by Louis Gerard Pacent. The heart of the new system is a revolutionary lamp. Other features include great reduction of background and extraneous noise, and it is claimed that, from the theatre standpoint, the new device represents a great step forward in effecting lifelike reproduction.

18 Cameras Being Added to Technicolor Fleet

EIGHTEEN new cameras, one of the largest individual camera contracts ever placed, will be added shortly to the fleet of 35 already doing service for Technicolor, it is announced by Dr. H. T. Kalmus. Less than a year ago there were only 9 Technicolor cameras in existence.

France

THE PRESIDENT of the Council, Minister of the Interior, addresses on February 24, a letter to the Prefects of France and Algeria dealing with the use of non-flam film. The attention of these officials is drawn to the fact that Pathe Rural and Cinelux projectors (the latter using Ozaphance stock) offer such guarantees of safety that authority may be granted to use these machines on premises which do not dispose of separate projection cabins. Other safety regulations, however, namely those dealing with the premises, exits, etc., have to be rigorously enforced as heretofore.

A company entitled Societe Parisienne Cinematographique has been formed in Paris, its object being production, distribution and export of cinematographic films. The company has a capital of 2,000,000 francs in 500 francs shares, of which 600 will be handled to Mr. Georges-Friede, the founder. Mr. Friede will also receive 1,000 founder's shares.

Africa

THE PUBLIC in North Africa requires sound-films, states a trade paper. An American sound picture met with exceptional success, in spite of the fact that the silent version was already known to the Algerian public, while others have also received successful exhibitions. All the first-run theatres of Oran, Fez, Rabat, Casabalanca, Tangiers, Sidi bel Abbes, are expected to be wired in the near future. Two cinemas in Tunis, one in Casabalanca, and one in Algiers already have American apparatus. In addition there are three French-made installations in Fez and Casabalanca. A "flying" servicing unit has been instituted in North Africa by an American electric company.

A new company, the Ondra-Lamac G. m. b. H., has been formed in Berlin with a capital of 20,000 marks. It will deal with the production and distribution of films, especially sound-films. Karl Lamac is to be the manager.

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Motion Picture Film Visualizes

(*Continued from Page 33*)

every million tons of sulphur, it is made clear that 10,000 tons go into the making of the old-fashioned remedy of "Sulphur and molasses." Fumigating and bleaching, it is shown, would account for 12,000 tons, while spraying and dusting fruit and vegetation would demand 32,000 tons. The rubber industry would require 24,000 tons, while the explosives industry would consume 28,000 tons. Sulphur is essential in the manufacture of sulphide pulp, used in making various grades of paper, and for this purpose 129,000 tons would be required. Chemicals would account for 28,000 tons, miscellaneous uses for 13,000 tons, and the manufacture of sulphuric acid would consume 724,000 tons. A series of scenes shows the dusting of orchards and vineyards to protect fruit against damage by insects and scale, the use of sulphur in the making of wood pulp, and the operation of a sulphuric acid plant.

The numerous uses of sulphuric acid, which accounts for practically three-fourths of the crude sulphur demanded by commerce, are made clear by recourse to animated photography, a huge tank containing sulphuric acid being tapped for smaller tanks representing the use of the acid in the manufacture of fertilizer, chemicals, coal products, iron and steel, paints and pigments and textiles, in the refining of petroleum, and in various metallurgical processes.

Copies of the film, "Sulphur," are available for exhibition by schools, churches, clubs, business and civic organizations, miners' local unions, and others. No charge is made for the use of the film, although the exhibitor is expected to pay transportation charges. Applications should be addressed to the Pittsburgh Experiment Station of the United States Bureau of Mines, Pittsburgh, Pa.

Urban Will Design for Fox's Wide Film Talkers

FIRST Fox pictures in color, with both under plans to be shot in both 35 and Grandeur width are "Connecticut Yankee in King Arthur's Court" and "The Man Who Came Back." Joseph Urban will design sets for both pictures. He is familiarizing himself with color for screen use.

The Foxcolor process on which the company has been conducting experiments for several months will be used. Sufficient camera and other equipment are expected in readiness by July 1, when "Connecticut Yankee" goes into production on the West Coast with David Butler directing. Will Rogers will be starred.

Work is going ahead on the Foxcolor lab in the East so that sufficient printing facilities for these and other color talkers will be at the company's disposal.

Foxcolor is Fox's own color process, taken from Eastman and formerly called Kodachrome.

Grandeur versions of duo Urban will design will be in black and white, unless a wide film color camera is perfected in the meantime, color versions being in the regulation or 35 mm.

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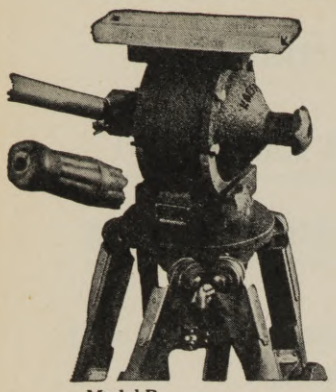
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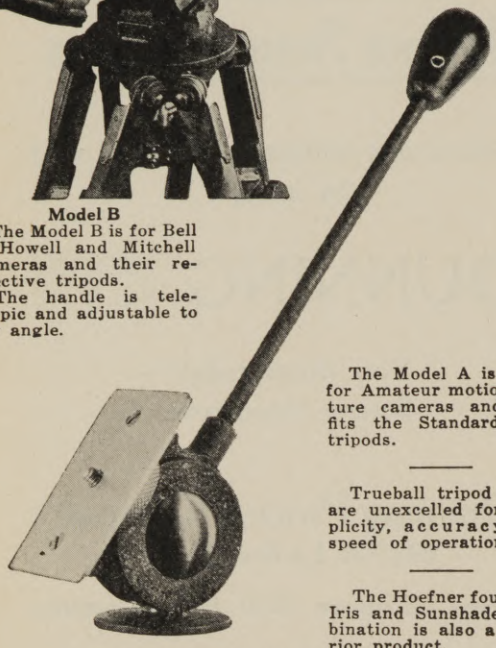
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High Lights of German Film Situation

By Douglas Miller

Assistant Commercial Attache of the Motion Picture Division, U. S. Department of Commerce, at Berlin.

THE last few months have been a period of change and uncertainty in German film circles. At this time there are certain main facts which stand out clearly and which should be borne in mind when considering future business in Germany.

The German film situation is difficult at present because of the general economic condition of the country; the change from silent to sound pictures which has not yet been completed; the patent difficulties between the large electrical firms which have made it uncertain what apparatus could be installed in studios and theatres; the absence of foreign and particularly American talkies from the market; the fall in German film exports owing to the language and patent barriers on German sound pictures.

Sound Patent Situation.

The electrical concerns will probably settle their present patent dispute in the year 1930 on a basis which will provide an exchange of patents and complete interchangeability of films on the principal makes of German and American apparatus. This will allow all American film companies to send some of their sound pictures to Germany if they so desire.

Contingent.

The present import contingent remains as a fundamental principle of the German Government policy. Whether or not the Geneva agreement is ratified, the contingent remains in some form or other. If the agreement is not ratified, the situation remains as it is. If on the other hand, the agreement does come into force on June 30 this year the administration of the present import regulations will be transferred to the Ministry of Education and the contingent system will continue as a matter of cultural protection rather than an import regulation. This is simply calling the thing by another name. There is no possibility of a free film market in Germany. If the Geneva agreement goes into effect the legislative measures which are already prepared will be passed within a few days transferring the present film control to the Ministry of Education. It is proposed to continue present regulations in any case about as they now are.

According to a written statement from the Film Commissioner there will be no special contingent on sound pictures or talkies as far as feature films are concerned up to June 30, 1931, but the Commissioner expressly reserves the right to institute special import restrictions on sound shorts. These proposed restrictions will probably be instituted in four or five months.

If the electrical companies compose their difficulties and American talking pictures enter Germany in large numbers the German industry proposes to request the Government to institute special protective regulations against foreign talkies probably sharpening the present contingent regulations which already exist. It has already been stated that these new regulations could not take effect before June 30, 1931, but if American talkies enter this market in quantity no doubt such regulations will be made shortly after that date in time to cover the playing season 1931-1932.

American Talkies.

American dialogue pictures will not be able to bring very large receipts in the German market. Once the public here has become accustomed to hearing talkies in their own language, it is not likely that they will care to listen to an English dialogue which few of them understand. Neither is there much probability that German language versions made in the United States will be great successes in Germany. Even Germans who have been in the United States only a few weeks unconsciously change their accent and manner of speaking so that it becomes noticeable when displayed before an audience in their own country. If American firms desire to exploit the German market in dialogue pictures they will have to make such pictures in some of the German speaking countries of Europe.

There still remains the possibility of obtaining satisfactory business in Germany on nondialogue pictures with silent films which are still taking up most of the playing time of the first run houses and are shown exclusively in 95 per cent of all the German theatres and in synchronized musical pictures with little or no English dialogue carrying the story in German titles.

The German film industry is not going to be able to compete with American pictures in the world market. They are

three years behind in the manufacture of talking pictures and have not yet begun on color. The companies here are unable to make the large financial expenditures which are necessary in order to keep abreast of the technical developments in the American industry.

American Production in Germany.

It will be almost impossible for American firms to produce talking pictures in Germany suitable for the American or foreign markets. Studios and equipment, actors, and experience are not available here. If American companies desire to continue selling their sound product in Germany they must obtain contingent right either by making distribution alliances with German producing companies or they must produce inexpensive German films for the local market. These can be either sound pictures made for local distribution or silent pictures, which are still the best commercial proposition in Germany and Central Europe generally, owing to the small proportion of theatres which are wired.

Conclusion.

The attitude of the American film companies toward Germany should be the one of two things; either they decide to remain out of this market permanently on account of the difficulties set up by patent controversies, the contingent, the language barrier, and the difficulty of recovering the cost of their own distribution organizations, or they must decide to come into Germany with such of their sound product as is suitable here, in a small way and make what sales they can, producing inexpensive German pictures for contingent rights, if necessary, but investing very much permanent capital in Germany.

If American film companies refrain from offering their products in the German market this will continue to have a depressing effect on the situation here and will be reflected in less box office receipts of the theatres. Nevertheless, the local exhibitors are still inclined to look at the situation from a nationalistic viewpoint and in the long run are apparently quite willing to get along with less profits in the hope of building up a stronger German film industry. If American film companies do not sell their product in Germany during the next year or two their place will be entirely taken by German and other foreign films and the German market will continue to exist without them. The longer they stay out of the market, the harder it will be for them to re-enter.

Belgium

AT THE international film exhibition in Antwerp, scheduled to take place next summer, the film as a means of propaganda and publicity for trade and industry will play a leading role. Several large halls have been installed for the exhibition of publicity films. Permanent shows will be run during the exhibition, with free admission. Numerous industrial concerns have decided to participate in these shows with pictures illustrating the life and work in their factories, and the manufacturing of various products. Moreover, a number of films for travel propaganda, showing landscapes of various countries, historical and artistic places, etc., will be exhibited.

New Developing Machine Invented by Roy Hunter

A NEW developing machine for negative and positive film, described as an improvement which greatly clarifies sound, has been invented by C. Roy Hunter, director of sound and head of the photographic division of Universal, and Robert Pierce, superintendent of the laboratory at Universal City. It is said to have a capacity of 1,000,000 feet of film weekly. Other companies are considering adoption of the new method, Universal states.

Spain

ACCORDING to trade press reports, Spanish producers are becoming active. Several features are under way. These are based on popular Spanish novels and feature well-known artists. One feature is starring the matador Nicanor Valalta. A new production and distribution company, "Selecciones Nunez," of Madrid, has released a sound-film entitled "Futvol, amor y toros," which had a very successful first-run. The first Spanish dialogue film, including songs and musical numbers of Guerrero, a well-known composer, is scheduled for early release.

The Dutch Government has ruled that the Board of Censors shall have control of all sound in connection with motion pictures, states a Hague message. Distributors must supply the Censor with all sound films and discs for approval.

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A. S. C. Member Photographs Shadow Bands

(Continued from Page 15)

Then the Clarks photographed the artificial shadow bands under conditions of such perfect control that they immediately determined the following points:

1. Negative best suited to show the delicate contrast;
2. Aperture required for a uniform picture as the eclipse progresses to, through and away from total darkness;
3. Standardized timing of the film, so that the computers at the observatory can calculate accurately the speed of the shadow bands as they sweep across the field of view.

A unique timing device was found made to order in the present type of sound track film. It was simple for these skilled cinematographers to co-ordinate the photographic record of the eclipse with the sound track record of the voice of the astronomer, who counted the seconds as he watched an astronomical chronometer during the period of the total phase.

Nowhere else in astronomical history has so accurate a method of timing a phenomenon been possible.

The artificial eclipse was created by turning the beams of the sunlight horizontally into the laboratory by a coelostat, mounted outside the building, passing the sun rays through a lens of known focus and bringing the sun image sharply onto a vertical screen of ground glass.

By heating the air near the rays with a flame, imitation shadow bands were caused to chase one another across the ground glass screen. The camera was set up at a known distance back of the screen.

By computing the degree of illumination of the ground glass from the aperture of the fixed lens and the side of the sun's image, the experiment was regulated to actual eclipse conditions.

The most successful film of several makes and types tried, proved to be Type 2, Eastman panchromatic.

This gave the clearest contrast and at the same time the best illumination to the edges of the field.

The Bell and Howell camera was equipped with a Zeiss 3-inch lens.

The exposures averaged of 1/60 second.

From the eclipse record, now reposing in the archives of the Mount Wilson Observatory, Dr. Nicholson says he can determine the width of the mysterious bands of light and shade that dapple all light-colored surfaces during an eclipse; the direction of their motion with relation to the direction of the sun's angle; the speed of the bands and the relationship between their parallelism and direction of motion.

"Astronomical science is extremely grateful to the Messrs. Clark and to the American Society of Cinematographers for their gift of this film," said Dr. Nicholson.

"Astronomers now learn with pleasure the cinematographers are men of scientific attainments, with ideals and aspirations.

"Astronomy was enriched in 1846 by the application of photography to its old visual methods. Now, in 1930, 84 years later, the motion picture camera, scientifically used, has again served to expand man's concept of the universe in which he lives."

The unusual feat of recording the scientific pictures with sound was also accomplished. The sound consisting of the astronomer's voice counting off the seconds of the actual eclipse as it was being made. This gives a record that cannot be anything but accurate. The Metrotone Newsreel furnished a crew of four men and two sound trucks for this, and the Fox studios, where Charles Clarke is employed, loaned Clarke for the experiment.

As this magazine goes to press too early to have pictures of the experiment we make the announcement now that in next month's issue there will be pictures of the shadow bands, the first in history, as well as scientific articles showing just what was accomplished for the advancement of science. —Editor's Note.

Milliken Very Frank

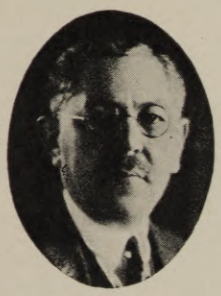
FORMER Governor Carl E. Milliken, of Maine, secretary of the Will Hays organization, told the Woman's Club of Reading, Pa., at an open meeting:

"The picture industry needs plenty of criticism, because there are still plenty of things wrong with it."

"But it is not as hopelessly vulgar as some declare it is," he added. The secretary answered many questions from the floor.

"Preview groups of representative women from the churches, women's clubs, and patriotic societies have been a great factor," he said, "in improving the movies in recent years. Co-operation between the public and the industry is needed to make film entertainment clean and fit for children."

Your Makeup Problems



By MAX FACTOR
[*Internationally Known Authority on Makeup*]

Dear Mr. Factor:

I appear in amateur theatricals regularly and as a rule only play those roles to which I am adapted being a little stout and also have a double chin. Now I am asked to play a juvenile role as the party who was to play that role failed us and there is no one else available. Will you please tell me how to best conceal my double chin. I am blonde.

F. B. Akron, Ohio.

Answer:

A double chin is shadowed by using dry rouge and blending carefully. It is also possible to do this by using a foundation three shades darker on the double chin than that used on the rest of the face, or you can shadow your face with a maroon or brown lining color.

Dear Mr. Factor:

Mascara hurts my eyes—will you please tell me of some other preparation which accomplish the same results, as mascara causes my eyes to water and smears up my make-up.

C. C. Fla.

Answer:

Since all mascaras are soluble in water and your eyes are oversensitive and subject to watering I suggest that you use Cosmetic. This preparation is made of wax with a very low melting point. Hold the cosmetic in a small container over heat until melted. Dip paper liner or orangewood stick into melted cosmetic and apply to the lashes, holding two or three lashes together by beading the tips. Repeat until they acquire the desired beaded appearance. The preparation is water proof and is readily removed with cold cream.

Dear Mr. Factor:

I have done stage work but only recently have I had an opportunity to appear on the screen. Make-up is very important and would you kindly give me my proper make-up for brunette with blue eyes and cream colored skin.

S. E. New Rochelle, N. Y.

Answer:

Use Panchromatic Grease Paint No. 25—Pancro, Face Powder No. 25—Pancro Lining color No. 22—Moist Rouge No. 9 and dark brown Dermatograph pencil.

Dear Mr. Factor:

I am a drab type of blonde and would give almost all I possess to find a make-up which will absolutely fit me. I have blue eyes and a very fair skin. Looking forward with much interest to your reply.

S. O. B.

Answer:

Satisfaction with make-up depends entirely whether or not you are using a color harmony make-up, suitable to your complexion. Also you must be careful in the manner with which you apply the make-up after your color harmony problem has been solved. The tendency today is to use make-up which gives the wearer a healthy look, therefore use darker make-up during the day, OLIVE FACE POWDER—BLONDE DRY ROUGE—MEDIUM LIP ROUGE—and for evening RACHEL FACE POWDER—NUMBER 18 DRY ROUGE—and LIGHT LIP ROUGE—the necessity of more vivid colors at night being that artificial lights absorb color in make-up and the more vivid the colors the more this light absorption is offset.

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No camera can be better than its lens. All Carl Zeiss Tessars ensure perfect definition and brilliancy, even at full aperture, and results will not be impaired by flare. These are only a few reasons why Carl Zeiss Tessar Lenses have universal endorsement

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Kindly Mention The American Cinematographer When Writing to Advertisers

German Color

THE first German color-sound-film, "The Nun of Heiligenworth," is scheduled for release this month. The film is produced by "Detofa" (Deutsche Ton und Farben-Film G. m. b. H.), of Berlin, directed by Rolf Raffe, and is starring Liane Haid. Countess Larisch, former lady in waiting to Empress Elizabeth of Austria, is responsible for the scenario.

According to a statement published by the Film-Kurier, there are 409 German cinemas, either wired or being wired for the reproduction of sound-films.

Technic of Recording Control

(Continued from Page 24)

chestras of 30 pieces or less, it is scarcely ever necessary to touch the mixer dial during a take. However, with very large orchestras, a loudness range of 50 db is sometimes obtained, and this range is slightly too great to be handled with the present system.

It is, therefore, necessary to do some manipulation. There are two ways this compressing of the range may be handled. The first is to permit the volume to rise fairly close to over-load and then began cutting down on the volume control to avoid valve clash or the record cutting over. This method is probably the easier one for the untrained mixer, but unfortunately removes a great deal of the "punch" from the big crescendos. The second method requires some knowledge on the part of the mixer of the music that is to be played. When a crescendo is commencing, the mixer should start reducing the volume slowly before the loudness has approached the danger point, and having lowered it the requisite amount, leave it alone entirely for the remainder of the crescendo. In a similar manner the raising of the level for the very soft parts should also anticipate the actual pianissimo passage.

New Exposure Meter

(Continued from Page 31)

between the two extremes, whatever the operator desires for the subject at hand. Accurate exposure readings are given for any type of subject, outdoor or indoor, and under any possible photographic light, natural or artificial. The B. & H. Photometer thus leaves nothing to guesswork and admits no chance of erroneous judgment. A simple initial adjustment corrects the instrument to the operator's own vision and to the strength of a small flashlight battery which supplies current to the bulb's filament."

Exposure readings are combined in the one instrument for either the Filmo 70 or the Filmo 75 cameras, and will later be made available for use with all types of movie still cameras. A full range of exposure readings are provided from F 1 to F 32.

The following from the Bell & Howell Company's instructions as to how to operate the Photometer will furnish a vivid glimpse of the instrument at work.

"The Photometer is highly selective. It is often advisable to take two readings, one on the darker areas of the subject and one on the lighter part of the subject. Thus one can expose accurately for the shadows and dark objects, or for the highlights, sunlit areas, and light colored objects—whichever will give the desired effect. Or one can select an exposure which will strike a happy medium between the two.

"If the dark and light areas are about equal, use a stop midway between the two extreme readings. If dark areas predominate, favor them in selecting the intermediate stop; if light areas predominate, favor them.

"In taking close-ups of people, you will usually want to expose for the face and disregard the exposure requirements of the surroundings. The Photometer not only affords accurate exposure readings for a camera operated at the normal speed of 16 exposures per second, but also gives the correct stop setting for Filmo camera speeds slower or faster than normal—8, 12, 24, 32, 48, and 64 frames per second."

The B. & H. Photometer weighs only 5⅛ ounces. It is 4¾ inches long and 1¼ inches in diameter.

India Film Imports Increase

A BIG increase in film stock imported into India is reported for the official year 1928-29. The total imports of film amounted to 30,000,000 feet, valued at 28 lakhs of rupees, or about 210,000 pounds as compared with 23,000,000 feet, valued 26 lakhs in 1927-28. The increase was almost entirely in stock, most of which came from Germany and England. The raw film imports increased from 12,000,000 feet to 19,000,000 feet, valued at 9 lakhs, or 67,500 pounds. Imports from America and England of exposed film amounted to 13 lakhs and 2½ lakhs in the previous year. Tariff on positive imports amounts to 4½ annas per feet and the duty stands at 15 per cent. No increase is expected this year.

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FOR SALE—170-degree Bell & Howell Camera. Choice of four focal length lenses. New 4-inch Iris and Matte box, 4 Magazines, metal carrying cases, light tripod. A. B. Smith, 124 So. Flower St., Los Angeles.

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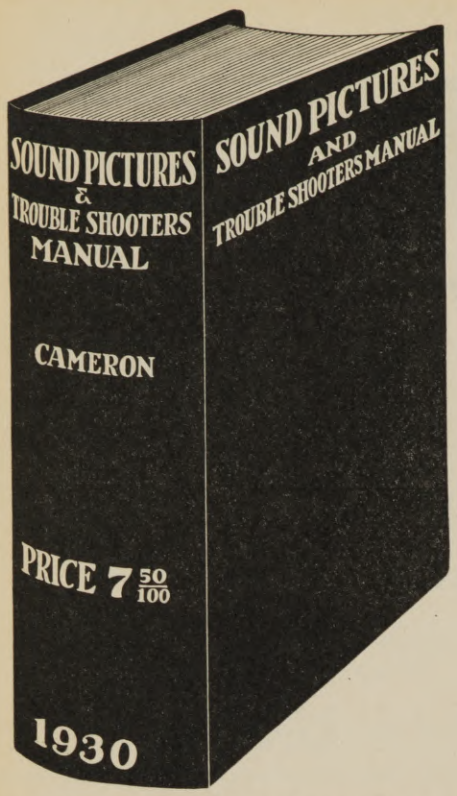
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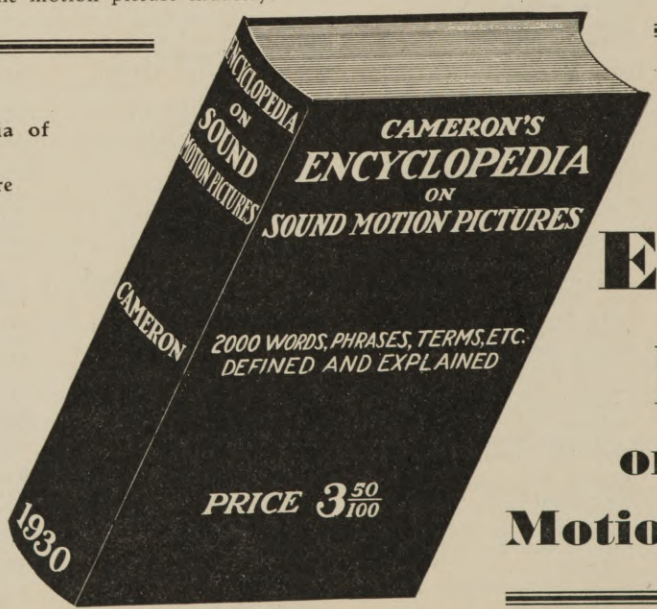
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